SpeedDome® Camera Dome

Installation and Service Manual

8000-1715-01, Rev. A

SpeedDome®
Camera Dome

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8000-1715-01, Rev. A

WLG 10/97

FCC COMPLIANCE

This equipment has been tested and found to comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

EQUIPMENT MODIFICATION CAUTION

Equipment changes or modifications not expressly approved by Sensormatic Electronics Corporation, the party responsible for FCC compliance, could void the user's authority to operate the equipment.

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Using this manual

Use this manual when installing Sensormatic SpeedDomes for the first time. Use it later as a guide for maintenance and troubleshooting.

Sections included in this manual

This manual contains four sections arranged as follows:

1.0 INTRODUCTION provides a product overview and specifications.

2.0 INSTALLATION provides background and procedures required to install and adapt the unit to its environment.

"Quick Reference Guide" The quick reference guide portion of the Installation and Service chapters provides procedures, wiring diagrams, and cable terminations in a reference format. Copy appropriate pages for use in the field.

Appendixes contain information on attaching SpeedDome camera domes to American Dynamics systems and SensorNet/Unicard domes.

Questions?

For technical support or questions that this manual does not address:

Customer Engineers call 1-800-543-9740.

Dealers call 1-800-442-2225

1.0 Introduction

In this section:

- What is SpeedDome? 1-1
- SpeedDome Features 1-2
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1.1 WHAT IS *SpeedDome*™?

The SensorVision SpeedDome (Figure 1-1) is a programmable dome designed for retail stores, casinos, manufacturing facilities, hotels, hospitals, and a wide variety of other facilities, especially where appearance is an important consideration.

The SpeedDome is part of a SensorVision CCTV (Closed Circuit Television) system, a network of remote camera devices. The dome pans, tilts, zooms, and focuses on the subject, whether it is in low light, moving, or at a distance.

Manual operation enables these functions to be controlled by a host control system from a centrally located console. Automatic operation enables the dome to store, and recall at a later time, camera scenes or field of views (Targets/Presets) and a series of pan/tilt/zoom movements (Patterns). SpeedDome can also activate or respond to external security devices.

Compact, Visible Dome. SpeedDome is visually appealing and unobtrusive. The dome chassis consists of a carriage assembly hidden inside a protective housing with a ceiling-mounted, gloss black "eyeball" suspended from it. The carriage assembly contains the dome's power supply, a pan motor assembly, and electronic circuitry used to operate the dome. The eyeball, only 19cm (7.5") in diameter, houses a camera, camera electronics, lens, lens motors, and tilt assembly.

Monochrome and Color Cameras. The SpeedDome uses monochrome or color cameras. Monochrome cameras come in 1/2" CCD, EIA, 60Hz and 1/2" CCD, CCIR, 50Hz versions. Color cameras come in 1/2" CCD, NTSC, 60Hz and 1/2" CCD, PAL, 50Hz versions.

The color camera is fully digital, which has several advantages over analog versions. It has no field adjustments, and better light sensitivity (2.2 lux) and picture resolution (430 TV lines) due to Digital Signal Processing (DSP).

Camera Lens. The indoor version uses a motorized 8–80mm, f1.2 lens; the outdoor version uses an 8–80mm, f1.2 lens or an f1.8, 12–120mm lens. The lens and associated electronics provide a totally unique Iris Preference™ that automatically adapts the picture to even the most difficult lighting conditions (see "Iris Preference™" under features).

Camera/Lens Concealment. For indoor versions, a clear, acrylic "contact lens" mounts flush with the contour of the eyeball to prevent detection of the camera's viewing position. For indoor versions, outer acrylic bubbles, available in clear, tinted, gold, or mirrored finishes further conceal the camera's viewing position or customize its appearance to blend with special decors.

1.2 *SpeedDome* FEATURES

Performance Features

In alphabetical order:

- **Alarm inputs and outputs.** The SpeedDome accepts dry-contact switch closures from four different sensing devices. This or any other system camera can then be programmed to scan or position itself to observe alarms and events. Onboard outputs enable the SpeedDome to control other activities such as turning on lights or initiating sound messages.
- **Apple Peel Default Pattern.** When no programmed patterns are entered into its software, the SpeedDome automatically defaults to an "apple peel" pattern. It initially aims along the ceiling and then performs 360° pans: 3 for the indoor mount and 3 for the outdoor mount, dropping 30° after each pan.

- **Automatic Calibration.** When power is first applied, the SpeedDome calibrates its position-sensing electronics by going through a one-minute motion routine (during which it ignores commands).
- **Automatic Lens Control (ALC).** Also called auto-iris, this feature enables the lens iris to adjust to different lighting conditions automatically; however, it can be overridden at the console to adjust lighting manually. See "Iris Preference " in this section.
- **Automatic/Manual Dome Reset.** A watchdog circuit automatically resets the dome if preprogrammed instructions are incorrect. The dome can be manually reset using keyboard commands from the console as long as the dome can communicate.
- **Automatic Synchronization.** The dome automatically synchronizes to a 50 or 60Hz ac source, free-runs on its own internally generated clock, or synchronizes to an external frequency generator such as a Genlock.
- **Auto-Repeat Surveillance Pattern.** The dome can be "taught" to continuously pan any designated area and to zoom-in for close-ups as it pans. Once activated, the pattern repeats only if it is commanded to do so; the pattern will run only once.
- **Backup Power.** Depending on the dome's processing requirements, the backup power will maintain memory for at least a 24-hour time period.
- **ClearView™.** The outdoor SpeedDome is equipped with a unique heater and air circulation system that keeps the outer lens clear of ice and fog in any weather condition.
- **DSP Motor Control.** All lens motors are assembled on a balanced mechanism that supports high-speed pan and tilt movements. Digital signal processing (DSP) and dynamic motor braking ensure precise and fluid camera movement and dramatically extend motor life.
- **High-Resolution Color Camera.** This digital camera delivers superb picture clarity and vivid colors. A high-resolution monochrome camera is also available.
- **Iris Preference™.** This feature enables the operator to manually adjust backlighting beyond the adjustments made by the ALC for precise and accurate illumination of the subject. Iris Preference combines the flexibility of manual iris with the benefits of auto iris.

- **Pattern Speed Multiplier**. With the VM1 system, the operator can multiply the base pattern speed range of the camera (3 –24° per second depending on zoom position) by two (6–48°), three (9–72°), or four times (12–96°). All other host systems have fully proportional pan (0–90°/sec) and tilt (0–50°/sec).
- **Transient Protection.** All dome inputs and outputs are opto-coupled, transformer isolated, or provided with heavy duty transient protection to enhance long-term product reliability. The outdoor dome also has lightning strike protection.
- **Target (Preset).** The SpeedDome can precisely pan, tilt, zoom, and focus in on an alarm-triggered event in less than one second. This speed and accuracy enables a single SpeedDome to offer better coverage than multiple fixed cameras.
- **Switching Power Supply.** Compared to previous domes, this circuit reduces power consumption by 60 percent and enables cable runs of up to 120 meters.
- **Zoom Adjusted Program (ZAP)™**. The ZAP feature automatically adjusts pan and tilt speeds during manual operation to keep the video image constant as the camera lens adjusts from wide to telescopic. For example, a 10x lens panning at 24° per second at wide angle slows to 3° per second at full zoom. Programming or running a pattern disables ZAP.
- **180° Flip™.** The dome can enhance the tracking of a target as it moves toward the camera, directly beneath it, and away from it by flipping its camera 180° (hence, turning the video image right-side-up) at the point where the target passes directly beneath the dome.
- **10X "Fast" Lens.** A 8-80mm, f1.2 lens or 12-120mm (outdoor), f1.8 lens is provided. The video image from the 8-80mm lens fills the monitor screen at 30 meters *(100')*; the video image from the 12-120mm lens fills the monitor screen at 45 meters *(150')*.

1.3. Installation Methods.

Indoor and outdoor domes can mount in a variety of ways (Figure 1-2).

Indoor domes. For "drop tile" ceilings, a dome housing is available that fits standard 2 x 2 openings.

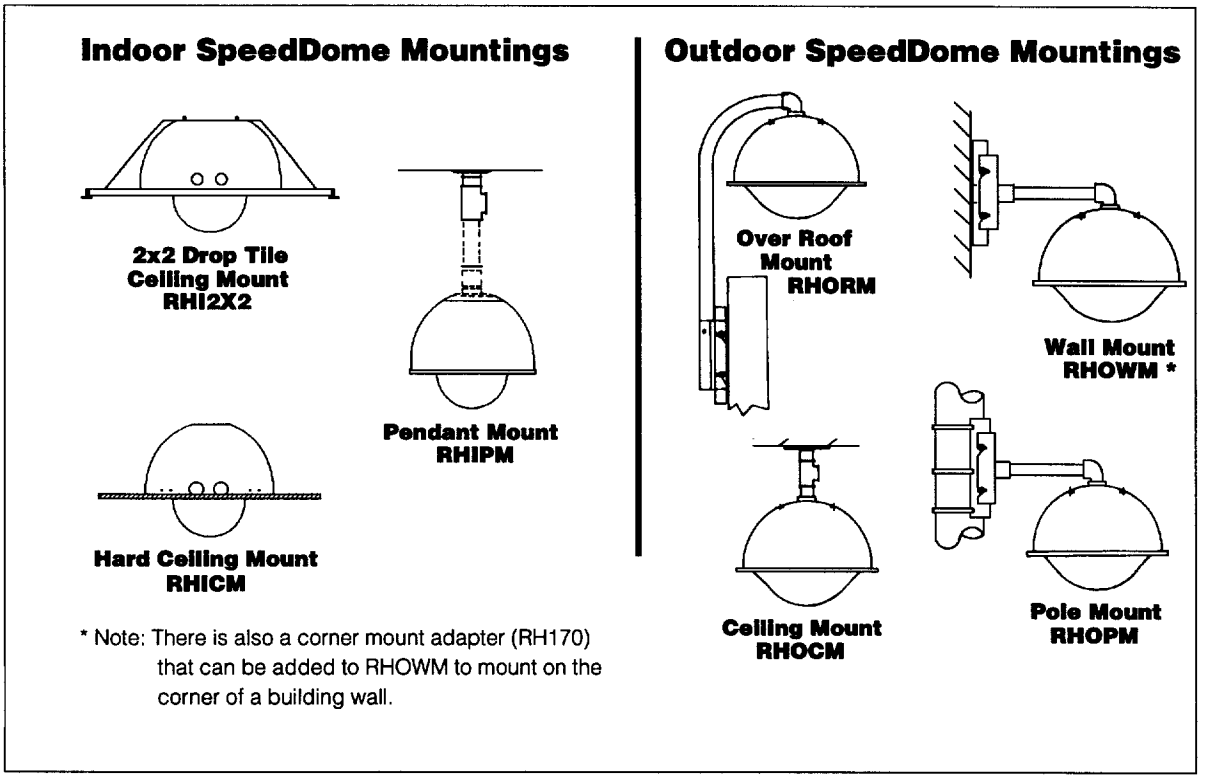
For sheet rock, wood, or ceilings with special finishes, a hard ceiling housing is available. The 20mm lip of this housing enhances the appearance of the dome in well designed ceilings.

For indoor ceilings of 6m or more, a 38mm pipe is added to the hard ceiling mount to form a pendant mount. The pipe and housing are matte white, but can be painted to match decor.

Outdoor domes. Outdoor domes are furnished with mounts for poles or for the sides of buildings. The most popular is an over-the-roof design that mounts to the parapet. This mount offers two advantages: 1) the dome can look over the roof as well as at the area around the building, and 2) the mount enables the dome to swing in so it can be serviced from the roof, eliminating the need for an expensive mechanical lift.

All mounts facilitate quick installation after site preparation, enabling wiring to be done during rough building construction. Once the CCTV system is turned on, the domes can then be quickly installed to monitor the move-in and set-up of the facility.

Figure 1-2. SpeedDome housings—mounting options


Indoor SpeedDome Mountings
2x2 Drop Tile Ceiling Mount RHI2X2
Pendant Mount RHIPM
Hard Ceiling Mount RHICM
* Note: There is also a corner mount adapter (RH170) that can be added to RHOWM to mount on the corner of a building wall.
Outdoor SpeedDome Mountings
Over Roof Mount RHORM
Wall Mount RHOWM *
Ceiling Mount RHOCM
Pole Mount RHOPM

Installation and Service Features

In alphabetical order:

- **Interchangeability**. Each dome can be easily disconnected and plugged into a new location.
- **Internationally Recognized Connectors.** Internationally recognized connectors are used to connect composite and video cables from the controller to the dome. The dome address can be changed without cable disconnect (powering down the dome).
- **Safety.** The SpeedDome meets all international regulatory agency standards. Electrically, all SpeedDomes utilize low-voltage Class 2 circuitry and cable connectors keyed to eliminate electrical hazards during use. Mechanically, indoor domes use safety chains to anchor the dome to building structural members and a safety lanyard to retain the chassis in its housing during servicing. Outdoor domes also use guide wires to maintain their structural integrity.
- **Simple Disassembly.** Only a Phillips screwdriver is required to disassemble each motor (2 screws), the slip ring (2 screws), the camera (four screws), and each PC board (2 to 4 screws).

- **Snap-Hinge Chassis.** Two sets of spring-loaded locking pins enable the light weight camera chassis to swing out of its housing for servicing or to be removed entirely.
- **V-Lock Adjustment.** The SpeedDome eliminates old cumbersome V-lock procedures via a remote V-lock adjustment that enables synchronization to the ac power line by one person at the control console.

1.4 SPECIFICATIONS

See the following pages.

Indoor *SpeedDome* Specifications
Monochrome (RAS585)/Color (RAS586)

U.S. Customary measurements in italics are rounded off.

■ Operational

Pan/Tilt Speed:	3° to 24° per second (based on zoom position)
Pan Speed Multiplier:	2X, 3X, 4X
PanTravel:	360°
Tilt Travel:	>90°
Pan/Tilt Accuracy:	±.5°
Zoom/ Focus Accuracy:	±.5%
Camouflage Lens	
– Density:	0.5f
– QuickView™Time:	<1 sec.
Auto Synchronization	
– External:	4Vp-p composite sync/220Ω
– Line Locked:	Remote V-phase adjustment
– Internal:	Built-in sync generator
Memory Backup:	>24 hours
Address Range:	1-99
Programmable Targets:	See System Data Sheet
Programmable Patterns:	3
Alarm Inputs:	4 dry contacts/3.5mA sink
Alarm Outputs:	4 open collector drivers @ 12Vdc, 40mA

■ Electrical

Primary Source:	16 to 36Vac, 50/60Hz
Power Consumption:	20W max.
Power On In-Rush Current:	4A for 1/2 cycle
Surge Protection	
– Video Output:	100A
– Power Line:	1200A
– Sync Input:	Opto-isolated
– RS422 Comm. Line:	100A
– SensorNet Comm. Line:	Isolation transformer coupled
– Alarm Inputs:	100A

■ Regulatory

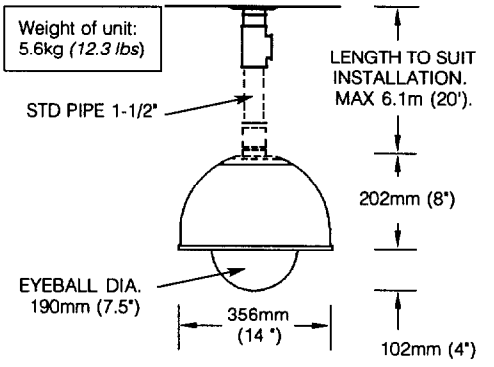
Emissions:	FCC Part 15, Subpart B, Class A CISPR 22, Class B
Safety:	ETL listed as: UL1950, UL1409 CSA 22.2 No. 205-M1983, CSA 22.2 No. 950

■ Environmental

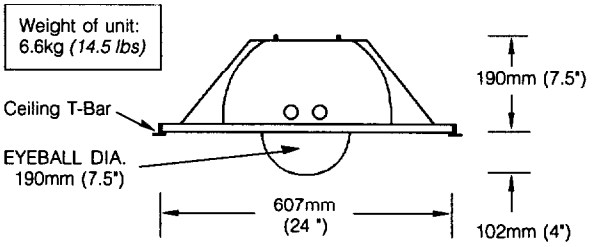
Operating Temperature:	-10°C to 50°C *(14°F–122°F)*
Relative Humidity:	0 to 95% non-condensing

■ Mechanical

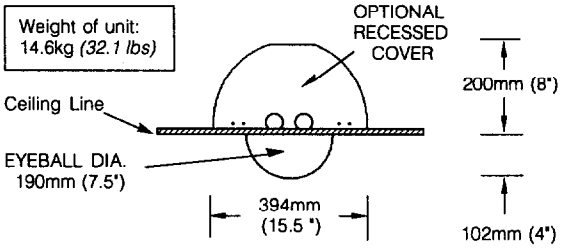
Pendant Mount - RHIPM



2x2 Drop Tile Ceiling Mount - RHI2X2



Hard Ceiling Mount - RHICM



■ Camera

Monochrome/Color

Type:	Interline transfer 1.27cm (1/2") CCD array
Scanning Area:	6.4 (H) x 4.8 (V) mm
Scanning System:	2:1 interlace
Video Out:	1.0Vp-p/75Ω composite
Signal-to-Noise:	48dB (typical)

Monochrome only

Horizontal Resolution:	500 lines at center
Minimum Illumination:	0.225 lux at f1.2 (AGC on)
AGC:	>24dB
EIA	
– Pickup Device:	682 (H) x492 (V) pixels,
– Scanning:	525 lines, 60 fields, 30 frames
– Horizontal:	15.734kHz
– Vertical:	59.9Hz internal sync
CCIR	
– Pickup Device:	681 (H) x 582 (V) pixels,
– Scanning:	625 lines, 50 fields, 25 frames
– Horizontal:	15.625kHz
– Vertical:	50Hz

Color only

Horizontal Resolution:	430 lines at center
Minimum Illumination:	2.25 lux at f1.2 (AGC on)
White Balance:	Through-the-lens (TTL) Auto Tracing White balance (ATW)
NTSC	
– Pickup Device:	682 (H) x492 (V) pixels,
– Scanning:	525 lines, 60 fields, 30 frames
– Horizontal:	15.734kHz
– Vertical:	59.9Hz internal sync
PAL	
– Pickup Device:	681 (H) x 582 (V) pixels,
– Scanning:	625 lines, 50 fields, 25 frames
– Horizontal:	15.625kHz
– Vertical:	50Hz

■ Lens

Focal Length:	8 to 80mm
Aperture:	f1.2
Viewing Angle	
– 8mm:	44.0°(H) x 33.3°(V)
– 80mm:	4.7°(H) x 3.5°(V)

Field-of-View Formulas:

$$\frac{\text{6.4mm* x distance from camera (ft.)}}{\text{focal length (mm)}} = \text{Hor. view (ft.)}$$

$$\frac{\text{4.8mm† x distance from camera (ft.)}}{\text{focal length (mm)}} = \text{Vert. view (ft.)}$$

*Horizontal scanning area of pickup device in this camera.
†Vertical scanning area of pickup device in this camera.

Example of a wide angle view of a 8 to 80mm lens at 3.05m *(10')*:

$$\frac{\text{6.4mm x 10 ft.}}{\text{8mm}} = \text{8ft. horizontal view}$$

$$\frac{\text{4.8mm x 10 ft.}}{\text{8mm}} = \text{6ft. vertical view}$$

Outdoor *SpeedDome* Specifications
Monochrome (RAS285)/Color (RAS286)

U.S. Customary measurements in italics are rounded off.

■ Operational

Pan/Tilt Speed:	2° to 18° per second for 12–120mm focal length 3° to 24° per second for 8–180mm focal length (based on zoom position)
Pan Speed Multiplier:	2X, 3X, 4X
PanTravel:	360°
Tilt Travel:	>90°
Pan/Tilt Accuracy:	±.5°
Zoom/ Focus Accuracy:	±.5%
Camouflage Lens	
– Density:	0.5f
– QuickView™Time:	<1 sec.
Auto Synchronization	
– External:	4Vp-p composite sync/220Ω
– Line Locked:	Remote V-lock adjustment
– Internal:	Built-in sync generator
Memory Backup:	>24 hours
Address Range:	1-99
Programmable Targets:	See System Data Sheet
Programmable Patterns:	3
Alarm Inputs:	4 dry contacts/3.5mA sink
Alarm Outputs:	4 open collector drivers @ 12 Vdc, 40 mA

■ Electrical

Primary Source:	21 to 36Vac, 50/60Hz
Power Consumption:	130W max.
Surge Protection	
Video Output:	5,000A
Power Line:	5,000A
Sync Input:	5,000A*
RS422 Comm. Line:	5,000A
Alarm Inputs:	5,000A*

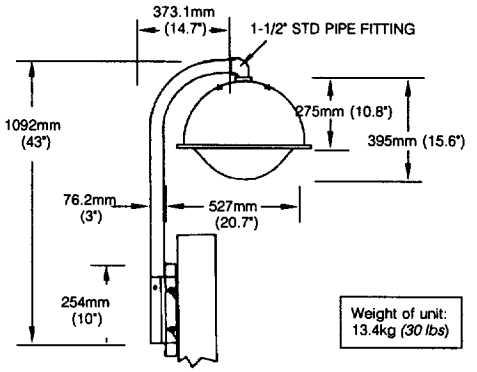
*Requires RS422 Surge Protector (p/n 4815-0021-01).

■ Regulatory

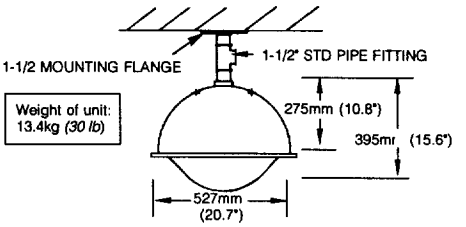
Emissions:	FCC Part 15, Subpart B, Class A VDE 0871, Class B CISPR 22, Class B
Safety:	ETL listed as: UL1950, UL1409 CSA 22.2 No. 205-M1983, CSA 22.2 No. 950 CENELEC EN60950

■ Mechanical

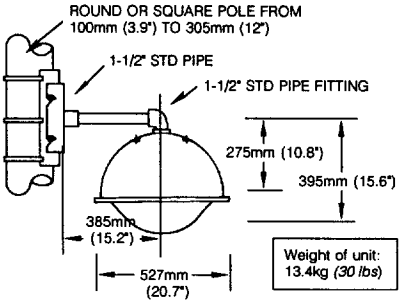
Over Roof Mount - RHORM



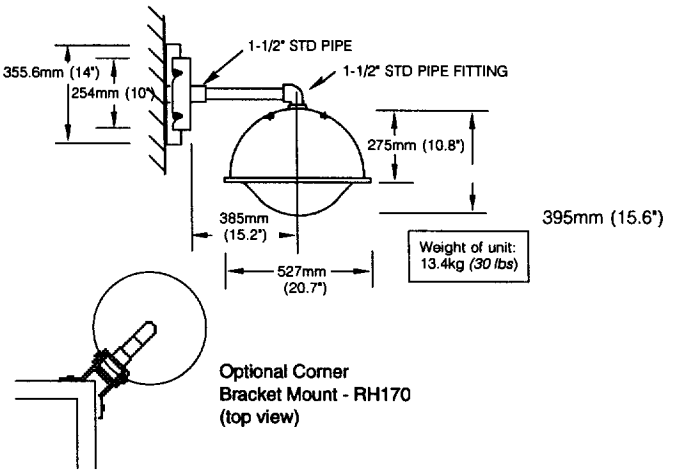
Ceiling Mount - RHOCM



Pole Mount - RHOPM



Wall Mount - RHOWM



Optional Corner
Bracket Mount - RH170
(top view)

■ Camera

Monochrome/Color

Type:	Interline transfer 1.27cm (1/2") CCD array
Scanning Area:	6.4 (H) x 4.8 (V) mm
Scanning System:	2:1 interlace
Video Out:	1.0Vp-p/75Ω composite
Signal-to-Noise:	48dB (typical)

Monochrome only

Horizontal Resolution:	500 lines at center
Minimum Illumination:	0.22 lux at f1.2 (8-80mm, AGC on) 0.5 lux at f1.8 (12-120mm, AGC on)
AGC:	>24dB
EIA	
– Pickup Device:	682 (H) x492 (V) pixels,
– Scanning:	525 lines, 60 fields, 30 frames
– Horizontal:	15.734kHz
– Vertical:	59.9Hz internal sync
CCIR	
– Pickup Device:	681 (H) x 582 (V) pixels,
– Scanning:	625 lines, 50 fields, 25 frames
– Horizontal:	15.625kHz
– Vertical:	50Hz

Color only

Horizontal Resolution:	430 lines at center
Minimum Illumination:	2.25 lux at f1.2, (8–80mm AGC on) 5 lux at f1.8, (12–120mm AGC on)
White Balance:	Through-the-lens (TTL) Auto Tracing White balance (ATW)
NTSC	
– Pickup Device:	682 (H) x492 (V) pixels,
– Scanning:	525 lines, 60 fields, 30 frames
– Horizontal:	15.734kHz
– Vertical:	59.9Hz internal sync
PAL	
– Pickup Device:	681 (H) x 582 (V) pixels,
– Scanning:	625 lines, 50 fields, 25 frames
– Horizontal:	15.625kHz
– Vertical:	50Hz

■ Lens (with Spot Filter)

	Long Lens	*Extended Lens*
Focal Length:	8 to 80mm	12 to 120mm
Aperture:	f1.2	f1.8
Viewing Angle		
Wide:	44.0°(H) x 33.3°(V)	29.8°(H) x 22.6°(V)
Tele:	4.7°(H) x 3.5°(V)	3.0°(H) x 2.3°(V)

Field-of-View Formulas:

$$\frac{\text{6.4mm* x distance from camera (ft.)}}{\text{focal length (mm)}} = \text{Hor. view (ft.)}$$

$$\frac{\text{4.8mm† x distance from camera (ft.)}}{\text{focal length (mm)}} = \text{Vert. view (ft.)}$$

*Horizontal scanning area of pickup device in this camera.
†Vertical scanning area of pickup device in this camera.

Example of a wide angle view of a 8 to 80mm lens at 3.05m *(10')*:

$$\frac{\text{6.4mm x 10 ft.}}{\text{8mm}} = \text{8ft. horizontal view}$$

$$\frac{\text{4.8mm x 10 ft.}}{\text{8mm}} = \text{6ft. vertical view}$$

■ Environmental

Operating Temperature:	-40°C to 50°C *(-40°F–122°F)*
Relative Humidity:	0 to 95% non-condensing
Storage Temperature:	–20°C to 65°C *(–4°F–149°F)*
Wind Loading	
Walll Mount, Pole Mount *, & Over-the-Roof Mount with Guidewires:	241 km/hr (150 miles/hr) sustained winds, ±.125° video oscillation at 48 km/hr (30 miles/hr) in gusting wind
Over-the-Roof Mount without Guidewires:	177 km/hr (110 miles/hr) sustained winds, ±.125° video oscillation at 24 km/hr (15 miles/hr) in gusting wind

*Assumes mounting on a rigid pole.

2.0 Installation

In this section:

- Pre-Installation Guidelines 2-1
- Safety Precautions 2-2
- Indoor Mounting Methods 2-2
- Outdoor Mounting Methods 2-2
- Other Camera Devices 2-2

2.1 BEFORE YOU BEGIN

2.1.1 Verifying and Unpacking Equipment

- Verify that all equipment has arrived.
- Verify that the unit shipped is the correct configuration for the site.
- Be organized.
- Unpack components in a back room.
- At the installation area, lay out parts in the order you will need them.
- Do not clutter traffic areas or cause a trip hazard.

2.1.2 Planning the Installation

First, carefully detail the system's layout. Before acquiring equipment, designate a representative to coordinate installation planning activities. Through close interaction with the planner and customer at the site, mark the precise locations of the domes on a blueprint of the facility. With the blueprint, a pre-installation site survey should be conducted with special installation considerations noted.

Upon equipment and cabling delivery to the site, review the blueprints and site survey with the facility and loss prevention managers. This will ensure that nothing has changed and that everyone is in agreement with the system layout.

2.2 SAFETY PRECAUTIONS

⚠ WARNING ⚠

Observe the following common sense precautions for your own safety:

ALWAYS USE:

- **Proper safety equipment** for the location and type of installation.
- **Proper lift equipment** to reach the point of installation.
- **Safety features** of the lift equipment.

BE SURE:

- **Electrical power** is not connected to the product during installation or to any object that you might contact during installation.

2.3 INDOOR MOUNTING METHODS

This sub-section consists of Quick Reference Sheets Q-1 through Q-9 and Q-18 through Q-20.

2.4 OUTDOOR MOUNTING METHODS

This sub-section consists of Quick Reference Sheets Q-10 through Q-20.

2.5 ADDITIONAL INFORMATION

This chapter covers SpeedDome installation and control via RS422 communications. Refer to Appendixes A and B, located at the back of this manual, for installation information on connecting SpeedDome to American Dynamics equipment, and SpeedDome installation and control via SensorNet.

Indoor Hard Ceiling Mount - RHICM

Method 1 - Installation without adjustable bracket

Required Parts

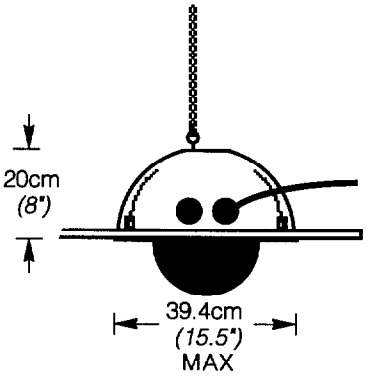
Hard Mount Kit

0351-0393-01 (part of 0200-0178-01, which ships with RHICM).

Description	Qty.	Part No.
"S" hook, open	2	2897-0004
Chain, Navy link	6	2898-0002
Eye bolt, 10-24 w/nut	1	2882-0112
Washer, flat, SS #10	2	2848-8100-17
Nut, locking, 10x24	1	2838-9154-05
Aluminum tape	4 FT	3200-0115-01

FOR ALL CEILINGS EXCEPT TILE.

CEILINGS MUST BE ABLE TO HOLD AT LEAST 9kg *(20 lbs)*!

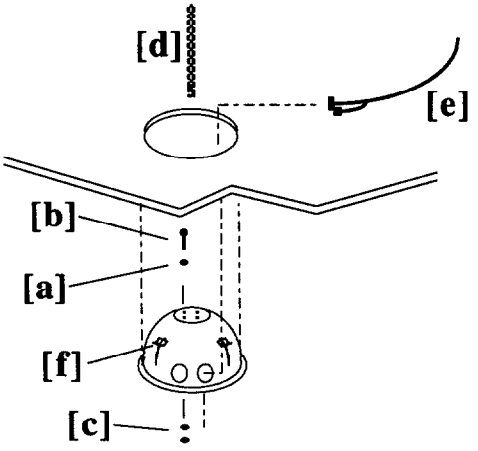


Procedure

IMPORTANT: Shipping box contains a template—do not throw the template out.

1.

Using the template, scribe a 35.6cm *(14")** hole in the ceiling or tile. Cut out the hole.



2.

Place a washer [a] over the eyebolt supplied [b]. Insert the eyebolt into a hole in the top of the housing and secure using a washer and nut [c].

*U.S. Customary Measurements in italics are rounded off.

3.

Using an S-hook, hang safety chain [d] from a strong ceiling member and, using a second S-hook, attach other end of the chain to the eyebolt. Keep the chain as taut as possible. Tighten both ends of each S-hook.

KEEP CHAIN AS TAUT AS POSSIBLE! CLOSE ENDS OF EACH S-HOOK!

DO NOT USE SPRINKLER OR FIRE CONTROL SYSTEM FOR SECURING THE SAFETY CHAIN!

4.

Feed video and multiconductor cables [e] through one of the two holes in the side of the housing. Then cover all openings in the housing with the aluminum tape supplied.

5.

With the three mounting tabs [f] of the housing in the up position, insert the housing into the ceiling hole, then from inside the housing bring the tabs down and tighten their screws to secure. The housing is now ready for chassis installation (page Q-8).

Indoor Hard Ceiling Mount - RHICM

Method 2 - Installation using adjustable bracket

Required Parts

RHICM is an ordering vehicle for 01RHICM, which contains:
0351-0394-01 - (major components listed below)
0200-0178-01 - Indoor Hard Mount; also includes:
0351-0393-01 - Hard Mount Install Kit:

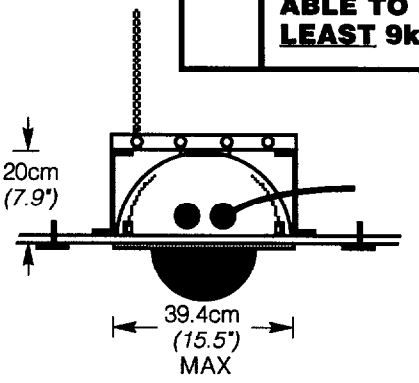
Description	Qty.	Part No.
"S" hook, open	2	2897-0004
Chain, Navy link	6	2898-0002
Eye bolt, 10-24 w/nut	1	2882-0112
Washer, flat, SS #10	2	2848-8100-17
Nut, locking, 10x24	1	2838-9154-05
Aluminum tape	4 FT	3200-0115-01

0351-0394-01 components:

Support, L-shape	2	0500-3439-01
Support, Z-shape	2	0500-3440-01
Washer, flat #10	8	2848-6301-23
Nut, wing 10-32	8	2834-0007-01
Screw, 10-32x3/4	2	2804-7931-05
Spacer, Nylon	16	3110-0016
Adapter plate	1	0500-3982-01
Screw, mach. M6x12	4	5801-4074-311

FOR ALL CEILINGS EXCEPT TILE.

CEILINGS MUST BE ABLE TO HOLD AT LEAST 9kg *(20 lbs)*!



Procedure

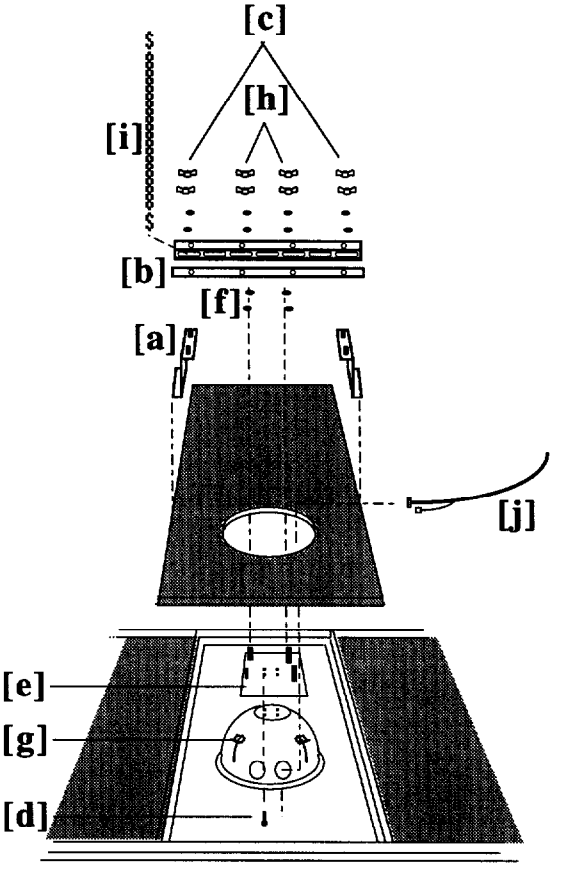
IMPORTANT: Shipping box contains a template—do not throw the template out.

1.

Tile ceilings only. Remove the ceiling tile(s) and inspect the ceiling frame. The frame must be capable of withstanding 9kg *(20 lbs)** of weight and the forces generated as the dome pans and tilts.

IF CEILING FRAME CANNOT SUPPORT DOME, ASK BUILDING MAINTENANCE TO INSTALL ADDITIONAL CEILING SUPPORTS.

All ceilings. Using the template, scribe a 35.6cm *(14")* hole in the ceiling or tile. Cut out the hole.



*U.S. Customary Measurements in italics are rounded off.

Indoor Hard Mount w/Adj. Bracket, continued

2.
Place "Z" supports [a] on the ceiling's top surface. For tile ceilings, make sure the edge of the supports rests flush with edges of tile. Refer to diagram on page Q-4.

3.
Place the two "L" supports [b]—cut to length, if necessary—over the threaded studs of the "Z" supports and fasten together using four washers and wing nuts provided [c].

4.
From inside the housing, insert the four screws [d] provided through the holes in the top of the housing and into the adapter plate [e].

5.
Place enough spacers [f] over each stud in the adapter plate to compensate for the thickness of the ceiling.

6.
With its three mounting tabs [g] in the up position, insert the housing into the ceiling hole until the studs in the plate fit through the slots in the "L" supports.

7.
Bring the three mounting tabs of the housing down and tighten their screws to secure. Then secure the plate to the "L" supports using washers and wing nuts [h].

8.
Using an S-hook, hang safety chain [i] from a strong ceiling member and, using a second S-hook, connect the other end of the chain to one of the "L" supports. Keep the chain taut. Tighten both ends of each S-hook.

KEEP CHAIN AS TAUT AS POSSIBLE! CLOSE ENDS OF EACH S-HOOK!

DO NOT USE SPRINKLER OR FIRE CONTROL SYSTEM FOR SECURING THE SAFETY CHAIN!

9.
Feed video and multiconductor cables [j] through one of the two holes in the side of the housing. Then cover all openings in the housing with the aluminum tape supplied. The housing is now ready for chassis installation (page Q-8).

Indoor 2x2 Tile Mount - RHI2X2

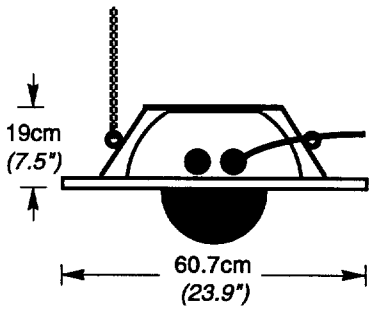
Required Parts

2x2 Install Components - 0200-0176-01

RHI2X2 is an ordering vehicle for 0200-0176-01, which contains the following items:

0400-0498-01 - 2x2 SpeedDome Housing
0351-0376-01 - 2x2 Housing Install Kit:

Description	Qty.	Part No.
Bar, ceiling tee	1	0500-0263-01
S-hook, open	2	2897-0004
Chain, Navy link	6 FT	2898-0002
Tab	2	0500-0264-04
Clip, T-bar	4	1400-0033-01

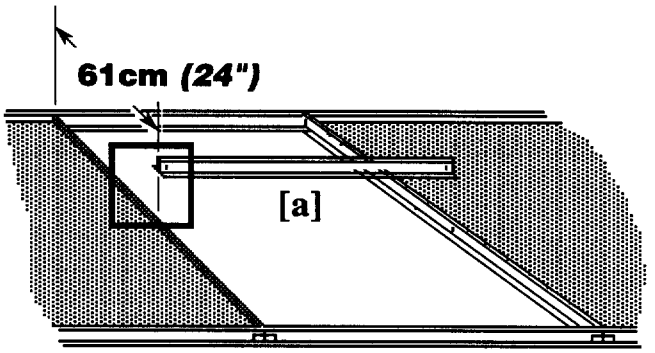


Procedure

1.

Remove the ceiling tile(s) and inspect the ceiling frame. The frame must be capable of withstanding 9kg *(20 lbs)** of weight and the forces generated as the dome pans and tilts.

IF CEILING FRAME CANNOT SUPPORT DOME, ASK BUILDING MAINTENANCE TO INSTALL ADDITIONAL CEILING SUPPORTS.

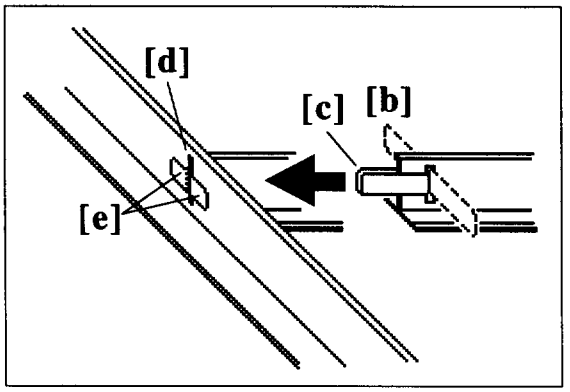


For 2x2 openings, skip steps 2 and 3.

2.

Cut the 2x4 ceiling tile to 60.3cm *(23.75")* using the length of the T-bar supplied [a] as a guide. Then, attach this T-bar (see detail) by centering steel tab [b] through the slot at end of the T-bar. Bend the tab as shown [c].

AREA OF DETAIL



3.

Slide the tab through the slot in the existing frame [d] 61cm *(24")* from the T-bar opposite. Bend the ends of the tab outward [e] to secure. Repeat for the other end of bar.

*U.S. Customary Measurements in italics are rounded off.

Indoor 2x2 Tile Mount Installation, continued

4.
Set the housing [f] into the ceiling opening. For slightly larger openings, see box below. If installing in a 2x2 ceiling, remove an adjacent ceiling tile to aid installation.

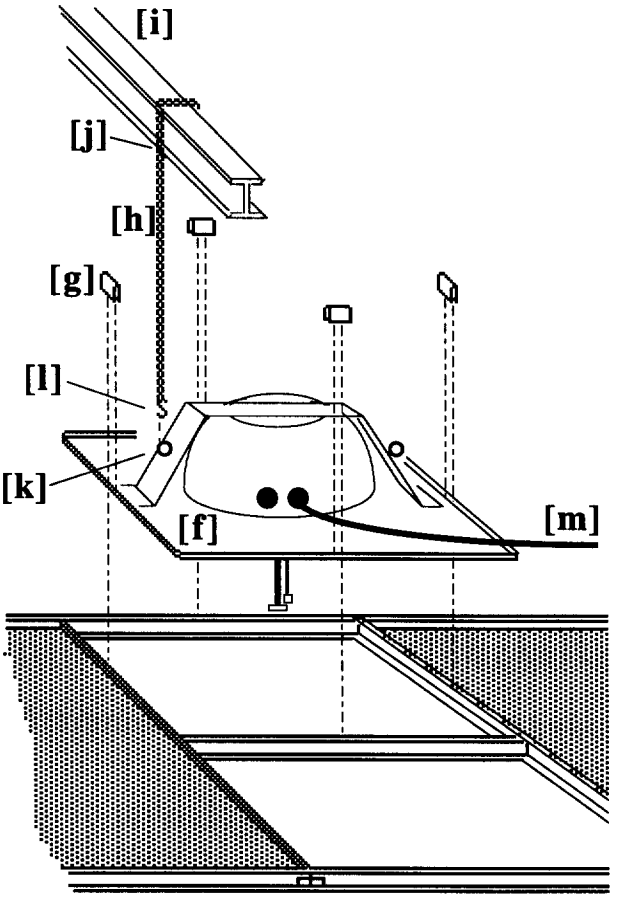
5.
Clamp the housing to the T-bars by snapping a T-bar clip [g] over the raised edge of the housing and the T-bar. Center this clip along the edge. Repeat for each side of housing.

6.
Wrap safety chain [h] around a strong ceiling member [i]; attaching it to itself using an S- hook [j]. Attach the other end of the chain to one of two eyelets [k] on the housing using a second S-hook [l]. Keep the chain as taut as possible. Close both ends of each hook.

KEEP CHAIN AS TAUT AS POSSIBLE! CLOSE ENDS OF EACH S-HOOK!

DO NOT USE SPRINKLER OR FIRE CONTROL SYSTEM FOR SECURING THE SAFETY CHAIN!

7.
Feed video and multiconductor cables [m] through one of the two holes in side of the housing and reinstall the adjacent ceiling tile. See chassis installation on page Q-8.

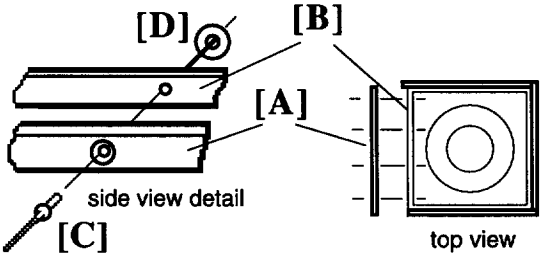


Add extension bars to the housing for ceiling openings slightly larger than 2x2 or 2x4.

Extension Bar Kit

0351-0243-01

Description	Qty.	Part No.
Bar, extension	4	0500-3326-01
Rivet, pop .125x.390	16	2873-0004-05
Washer, flat No. 5	16	2848-1408-01
Bar, ceiling tee	1	0500-0648-01
Tab	2	0500-0264-04
Clip, T-bar	4	1400-0033-01



Extension bars [A] mount to the edge of the housing [B] to provide a proper fit. Buttjoint as many bars as required using pop rivets [C] and washers [D], four per bar, as shown above. Do not use clips.

Indoor Pendant Mount - RHIPM

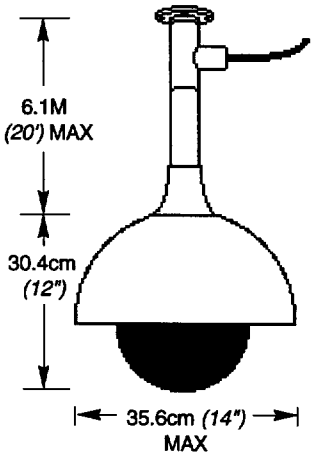
Method 1 - Standard Installation

Required Parts

Pendent Mount Components:

RHIPM is an ordering vehicle for 01RHIPM, which contains the following assemblies:
0351-0391-01 - Adjustable I-Beam Clamp Kit (not used with this method)
0200-0177-01 - Pendant Housing Assembly; also includes:
0351-0392-01 - Pendant Install Kit, which contains the following items:

Description	Qty.	Part No.
Flange, 1-1/4" dia.	1	1400-0069-01
Fitting, pipe tee	1	1417-0040-01
Nipple, short 1-1/4	1	1417-0041-01
Anchor bolt, 1/4x2-1/4 w/hardware	4	2880-0011
Pipe, 1-1/4", straight, 6m max, threaded both ends	1	CE supplied
Cap	1	0500-3964-01



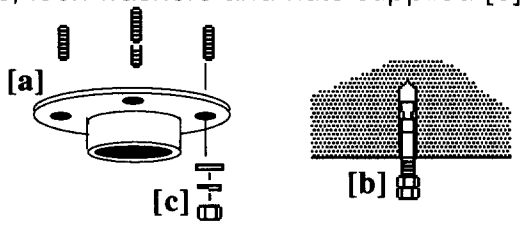
Procedure

1.

Using the flange [a] as a template, mark hole locations on ceiling for four bolts. Remove the flange and drill four .64cm *(1/4")** holes to required depth.

For each hole, screw two nuts onto the anchor bolt provided, with two threads of the second nut extend- ing over end of the bolt to protect the bolt threads from damage [b].

Hammer the bolt into ceiling leaving only its threads exposed. Remove the nuts and bolt the flange to the ceiling using the flat washers, lock washers and nuts supplied [c].



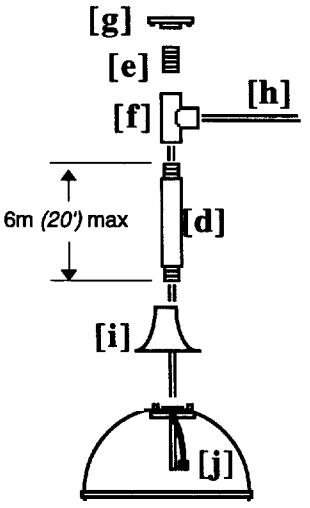
2.

Thread the straight pipe [d] (not supplied) and nipple [e] into pipe tee [f]. Thread the nipple of the entire assembly into flange [g].

3.

Feed video and multiconductor cables [h] through center hole of pipe tee and down through the pipe. **Note:** Remove the Cinch-Jones connector, if used, to enter pipe.

Slip the cap [i] onto the pipe, then thread housing [j] onto the pipe. See chassis installation on page Q-8.



*U.S. Customary Measurements in italics are rounded off.

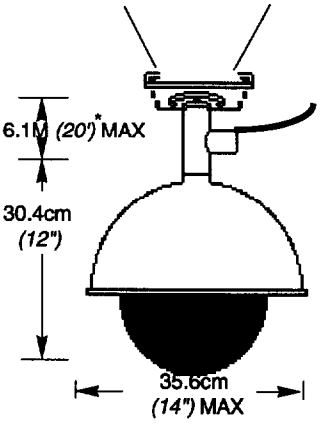
Indoor Pendant Mount - RHIPM

Method 2 - I-Beam Installation

Required Parts

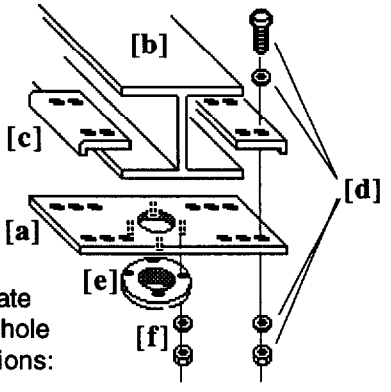
RHIPM is an ordering vehicle for 01RHIPM, which, contains the following components:
0400-0505-01 - Pendant Housing Assembly; also includes:
0351-0392-01 - Pendant Install Kit (not used with this method)
0351-0391-01 - Adjustable I-Beam Clamp Kit:

Description	Qty.	Part No.
Base plate	1	0500-3975-01
Clamp plate	2	0500-3976-01
Screw, mach. M6x70	4	5801-4194-311
Washer, flat	12	5840-0500-020
Nut, locking	8	5826-0500-020
Fitting, pipe nipple	1	1417-0041-01
Fitting, pipe tee	1	1417-0040-01
Flange, 1-1/4"	1	1400-0069-01

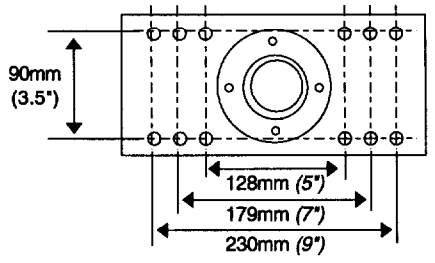


Procedure

I-beam attachment. Set the base plate [a] against a suitable ceiling member [b]. Secure the plate using clamps [c] and hardware supplied [d]—see base plate hole-to-hole dimensions, below. Attach the flange [e] using hardware supplied [f].



Base plate hole-to-hole dimensions:

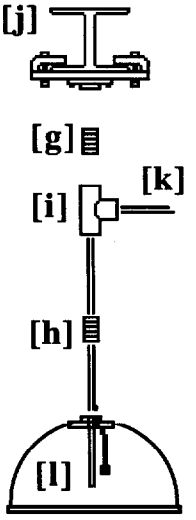


*U.S. Customary Measurements in italics are rounded off.

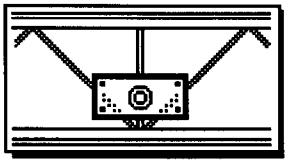
Vertical/Horizontal mounting. Thread nipples [g] and [h] into the pipe tee [i], and screw the entire assembly into the base [j].

Next, feed video and multiconductor cables [k] through center hole of pipe tee. **Note:** Remove the Cinch-Jones connector, if used, to enter pipe.

Finally, thread the housing [l] onto the pipe. See chassis installation on page Q-8.



Horizontal Mounting



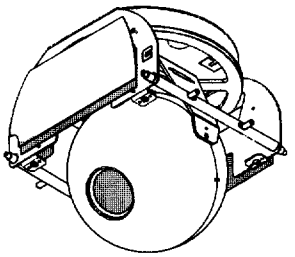
Note: If replacing pipe tee with pipe, cable exiting pipe tee must be no farther than 15.2cm *(6")* from I-beam clamp.

SpeedDome Chassis Installation

Required Parts

Skirt Assembly - 0400-0507-01
SpeedDome Install Kit - 0351-0377-01:

Description	Qty.	Part No.
Connector, BNC	1	2111-0035-01
BNC jack	1	2111-0034-01
Nylon Cable Tie	1	6009-0006



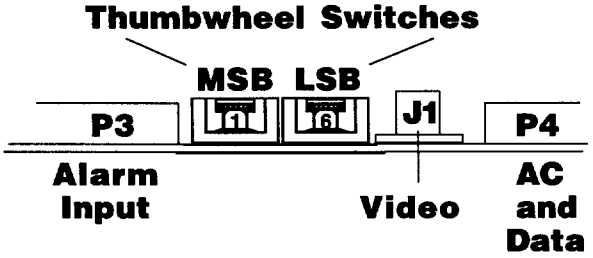
Procedure

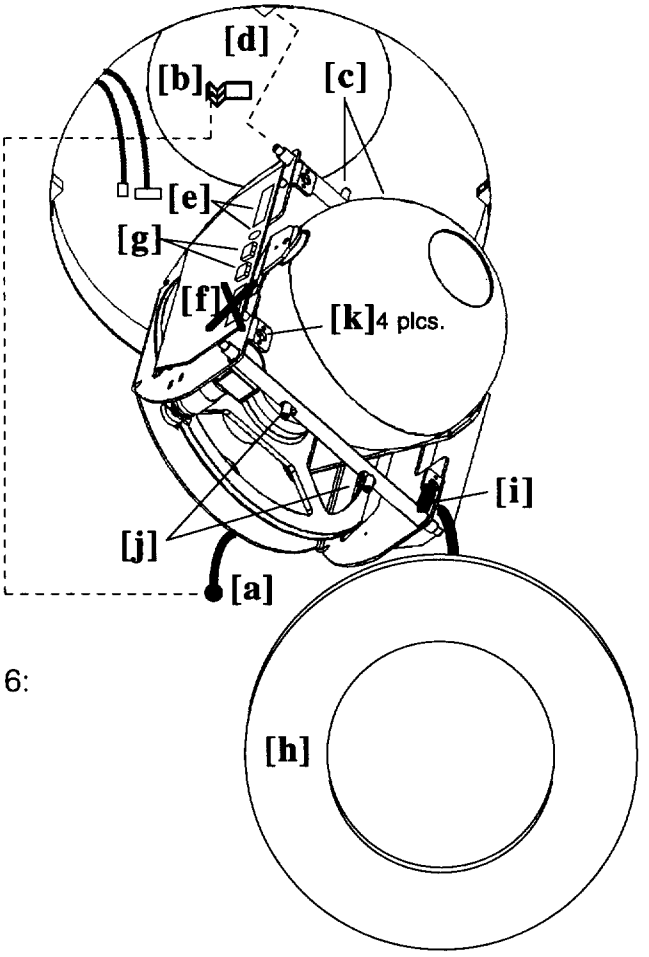
1.
Snap the ball [a] of the lanyard hanging from the chassis into the bracket [b] at the top of the housing.

2.
Squeeze the spring-loaded ejector pins [c] together to seat the chassis in the corner receptacles [d]. The PC board must face the cables exiting the access holes in the housing.

3.
With the chassis hanging down, connect the video and multiconductor cables to their receptacles [e]—refer to instructions on page Q-19. Do not use the alarm input connector [f] unless connecting alarms to domes.

4.
Set the thumbwheel switches [g] to the appropriate address. Example for address 16:





(continued on page Q-9)

Chassis Installation, *continued*

5.
Attach the skirt assembly or optional bubble assembly [h] to the chassis by inserting its T-lanyard into a slot [i] on the chassis until both ends catch securely.

6.
To lock the chassis in the housing, squeeze ejector pins [j] and swing the chassis all the way up, while easing the cables up through the access holes. Release these pins into the remaining corner receptacles.

> **EJECTOR PINS MUST BE FULLY INSERTED IN THEIR RECEPTACLES.**

7.
Snap the four pins of the skirt (or bubble) assembly into the four chassis receptacles [k].

8.
To compensate for accidental jarring during assembly, recalibrate the dome as follows:

a. At the console, call up the dome address number.

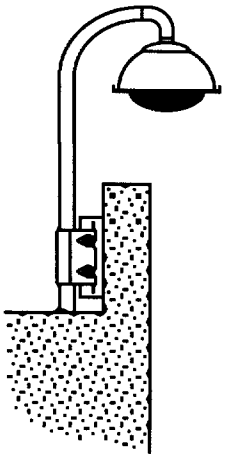
b. Press and hold the FAST key. Then—in order—press and hold the ZOOM OUT, FOCUS FAR, and IRIS OPEN keys.

When the dome begins to pan and tilt, release the keys.

Once calibrated, which takes about a minute, the dome is ready for use. Installation is complete.

Outdoor Over Roof Mount - RHORM

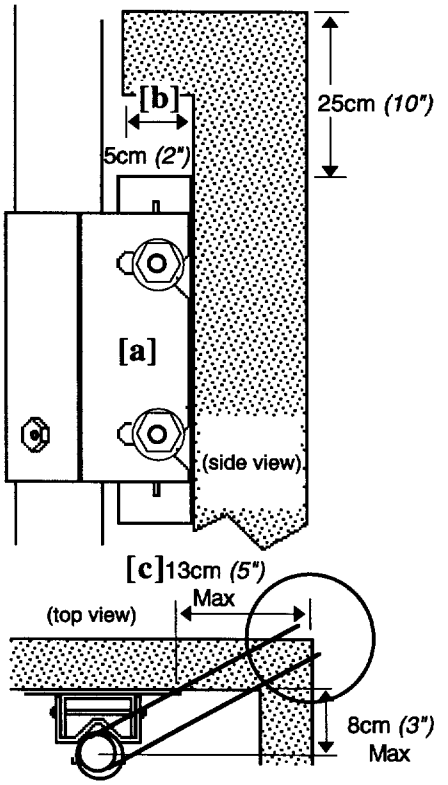
Required Parts



Over Roof Install Components

0200-0179-01, SpeedDome Housing Assy - ships with Outdoor SpeedDome
0200-0173-01, Over-Roof Mount Arm - ships with RHORM
0200-0174-01, Over-Roof Install Hardware - ships with RHORM:

Description	Qty.	Part No.
Plate, mounting	1	0500-3637-01
Bracket, mounting	1	0500-3638-01
Base wall/pole mount	1	0500-3463-01
Over-Roof Install Kit - contains the following items:	1	0351-0279-01
Fitting, 90° pipe	1	0500-3499-01
Anchor bolt, 1/2x5 1/2"	4	2880-0049
Anchor, hollow wall, w/ P	3	2880-0074-01
Bolt, hex 1/2-13x4"	1	2880-8917-01
Washer, lock1/2"	4	2847-0300
Cable tie, Nylon, 7.5"	10	6009-0005
Rod, thread 1/2-13x18"	1	0500-2734-01
Nut, Hex 1/2-13"	2	2838-9117-04
Washer, flat, SS, P, .531ID X 1.25OD	2	2848-8101-11
Washer, flat, ST, Z, .812ID X 2.0OD	1	2848-1409-16
RTV compound	1	1600-0001
Pipe sealant	1	1600-0095-01
Washer, flat 5/16"	8	2848-6301-02
Nut, hex 5/16-18"	8	2838-9116-01
Bolt, hex 3/8-16x3/4"	2	2880-0082-01
Adaptor, BNC, male to female	1	2113-0004
Nut, hex, 1.5" pipe w/seal	1	1417-0042-01



Procedure

Mounting to a solid wall: Mount bracket assembly [a] to a solid wall or poured concrete cap, where possible.

Mounting to a parapet: Mounting to the inside of a parapet is preferred. Typically, for the bubble to clear, mount the base within:

- 25cm *(10")** of the top of the parapet. A parapet with a 5cm *(2")* lip is shown [b].
- 13cm *(5")* from the corner of the building [c].

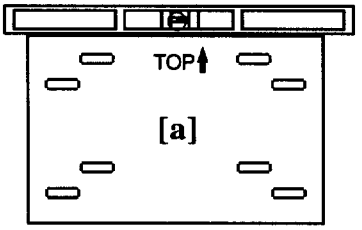
Mounting area (including clearance): Minimum 33cm *(13")* x 48cm *(19")*.

(continued on page Q-11)

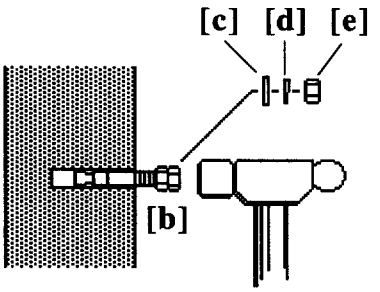
Note: If the above requirements cannot be met, mount the dome to the outside of the wall (a decorative cover can be purchased to enhance the look of the base). Alternately, a 10-inch extender can be screwed into the end of the pipe, but tell the customer that increased vibration from wind gusts may result.

* U.S. Customary Measurements in italics are rounded off.

Outdoor Over Roof Mount, *continued*

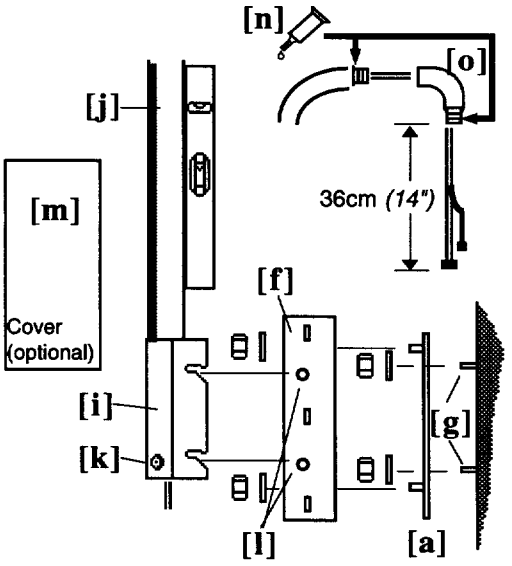


Place plate [a] in desired loca- tion, level, and mark slots. Plate MUST BE LEVEL. Remove tem- plate, then drill four 1/2-inch holes to the required depth for type of wall and hardware used.



For each hole into solid concrete, screw two nuts [b] onto an anchor bolt, with two threads of second nut extending over end of bolt to protect threads.

Hammer bolt into wall leaving 1-1/4 inch exposed. Remove nuts and attach a 1/2-inch flat washer [c], lock washer [d] and nut [e]. If voids are encountered, see **NOTE** below.

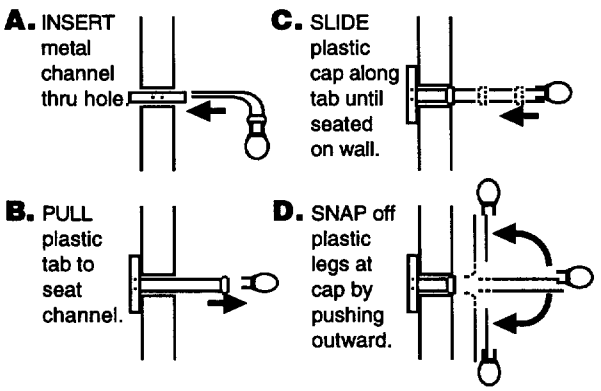


Slip slots of mounting plate [f] over bolts, togglers, or rods [g] and secure using proper hardware. Mount base [h] to the plate using hardware provided—any set of four studs can be used. Feed cables through bottom of bracket [i]. Slip smooth-end of pipe [j] over cable and into bracket. Secure pipe by tightening screw [k] and level by adjusting nuts [l]. If using a decorative cover [m], slide it over pipe.

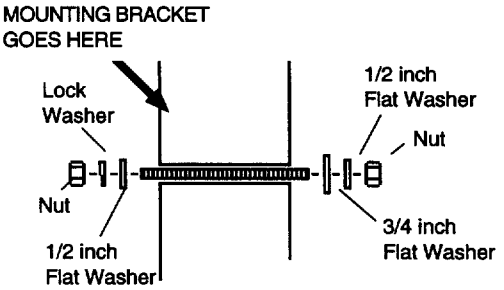
Apply pipe sealant to pipe threads [n], then slip elbow [o] over cable and screw elbow onto pipe. Once on, elbow opening should face down. **Note:** Approximately 36cm *(14")* of cable must exit elbow. The mount is now ready for housing and chassis installation on page Q-16.

NOTE: Voids encountered while drilling...

One void only: Insert toggler (provided) through hole where void ocurred. Insert associated bolt.


A. INSERT metal channel thru hole.
C. SLIDE plastic cap along tab until seated on wall.
B. PULL plastic tab to seat channel.
D. SNAP off plastic legs at cap by pushing outward.

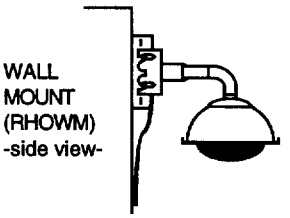
Two or more voids: For each void, drill hole through wall. Then, insert threaded rod (provided) through hole and attach hardware shown. Purchase additional rods/hardware as required.



Outdoor Wall Mount - RHOWM
Corner Bracket Option - RH170

Required Parts

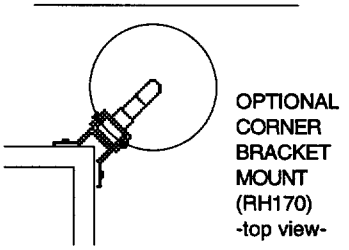
0200-0179-01 - Outdoor SpeedDome Housing Assembly, which ships with Outdoor SpeedDome, is required for these installation options.



Wall Mount Option (RHOWM)

RHOWM is the ordering vehicle for 0200-0162-01 - Outdoor Wall Mount w/Hardware, which contains the following items:

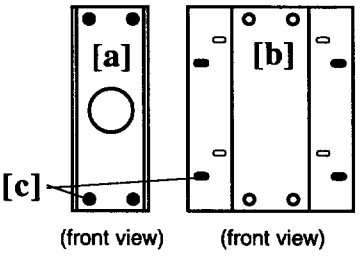
Description	Qty.	Part No.
Base, wall/pole	1	0500-3463-01
Support, wall/pole	1	0500-3464-01
Pipe, 12 in. long	1	0500-3465-01
Fitting, 90° pipe	1	0500-3499-01
Wall Mount Install Kit contains the following items:	1	0351-0283-01
Washer, flat ST, Z, .344IDX.875OD	4	2848-6301-02
Nut, hex Nylon-LK CAD 5/16-18	4	2838-9116-01
Anchor, wedge, bolt, 1/4 X 2.2	4	2880-0011
Pipe sealant	1	1600-0095-01
Plug, 1-7/8 x 1"	1	0649-0685-01
RTV compound	1	1600-0001
Adaptor, BNC, male to female	1	2113-0004
Nut, hex, 1.5" pipe with seal	1	1417-0042-01



Corner Mount Option (RH170)

RH170 is the ordering vehicle for 0200-0175-01 - Corner Bracket Mount, which provides the following item:

Corner mounting bracket	1	0500-3636-01

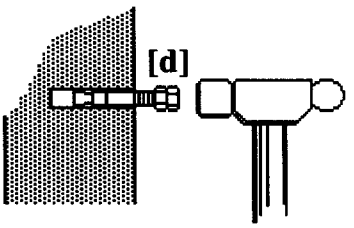


Procedure

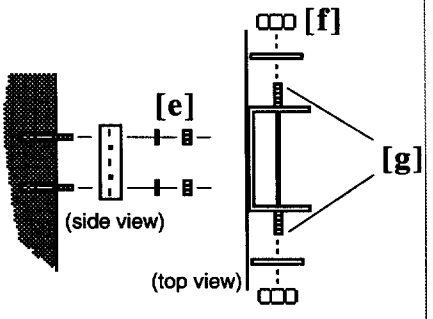
Place wall-mount base [a] or corner bracket [b] in desired location, level, and mark mounting holes [c].

Drill four 6.5cm (1/4") holes to the required depth. For each hole:

- Screw two nuts onto end of anchor bolt, with two threads of second nut extending over end of bolt to protect threads [d]. Lock the nuts in position by tightening them against each other.
- Hammer bolt into wall leaving 3.2cm (1-1/4") of bolt exposed. Then, loosen and remove nuts.



Slip base shown or corner bracket over bolts and secure using hardware [e]. Secure base to studs of corner bracket, if used. Then loosely thread a washer and nut [f] onto the four threaded studs of the base [g].



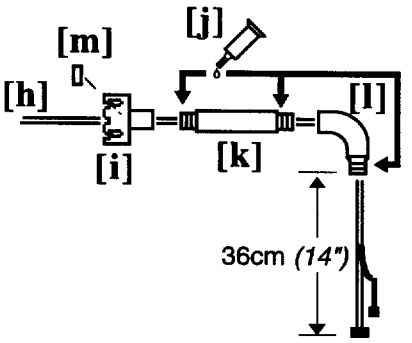
(continued on page Q-13)

Outdoor Wall Mount and Corner Bracket *continued*

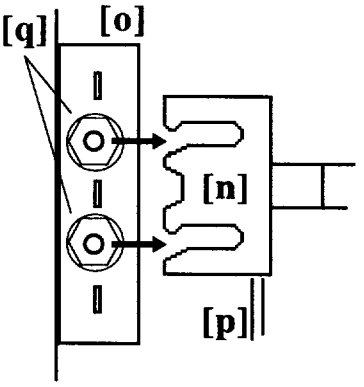
Feed camera dome cables [h] through mounting bracket (i).

Apply sealant [j] to threads of straight pipe [k], then slip pipe over cable and screw pipe into bracket.

Slip elbow [l] over cable and screw elbow onto pipe. Once on, elbow opening should face down. **Note:** Approximately 36cm *(14")** of cable must exit elbow. If so, insert plug [m] and seal with RTV.



Hook bracket [n] on threaded stud between washer and base [o] while feeding excess cable [p] back through hole in bracket. Level, and tighten nuts [q] on both sides of base to secure.

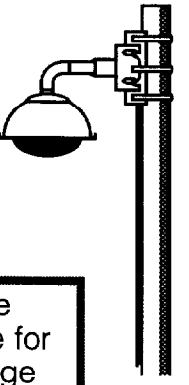


The mount is now ready for housing and chassis installation. See page Q-16.

*U.S. Customary Measurements in italics are rounded off.

Outdoor Pole Mount - RHOPM

Required Parts



0200-0179-01 - Outdoor SpeedDome Housing Assembly, which ships with Outdoor SpeedDome, is required for these installation options.

Pole Mount Components (RHOPM):

RHOPM is the ordering vehicle for 0200-0161-01, Outdoor Pole Mount w/Hardware, which contains the following items:

Description	Qty.	Part No.
Base, Wall/Pole	1	0500-3463-01
Support, Wall/Pole	1	0500-3464-01
Pipe, 12 in. Long	1	0500-3465-01
Clamp package (see note)	2	6010-0043-01
Fitting, 90° pipe	1	0500-3499-01
Pole Mount Install Kit contains the following items:	1	0351-0282-01
Washer, flat 5/16"	4	2848-6301-02
Nut, hex 5/16-18	4	2838-9116-01
Screw, M, HXHD, SS, 1/4 - 20 X 1"	2	2802-8401-72
RTV compound	1	1600-0001
Pipe sealant	1	1600-0095-01
Plug, 1-7/8 dia. 1" thick	1	0649-0685-01
Adaptor, BNC, jack to plug	1	2113-0004
Nut, hex 1.5" pipe w/seal	1	1417-0042-01

Note: Two clamp packages are provided: one for the dome, one for the J-box. Straps in each package are sufficient for 10cm *(4")* to 30.5cm *(12")* wide poles. For larger widths, order an additional package.

Procedure

Feed camera dome cables [a] through the large hole in mounting base [b].

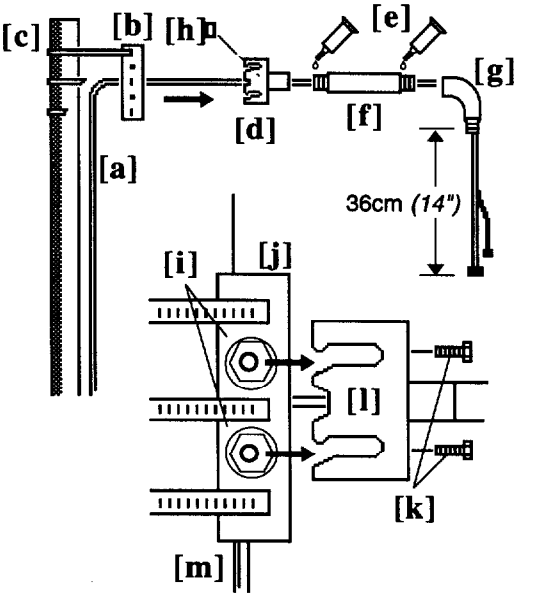
Following the directions on back of the clamp package (see NOTE above), strap the mounting base securely to the pole [c]. Feed cables exiting base through the hole in the mounting bracket [d].

Apply sealant [e] to threads of straight pipe [f], then slip pipe over cable and screw into bracket.

Slip elbow [g] over cable and screw elbow onto pipe. Once on, elbow opening should face down. **Note:** Approximately 36cm *(14")** of cable must exit elbow. If so, insert plug [h] into bracket and seal with RTV.

Loosely thread washer and nut [i] onto the four threaded studs of base [j]. Next, insert two 1/4-20 leveling screws [k] into bracket [l]. Then, hook bracket on threaded stud between washer and base while feeding excess cable [m] back through hole in base.

Use leveling screws to level. Tighten nuts on both sides of base to secure. The mount is now ready for housing and chassis installation. See page Q-16.

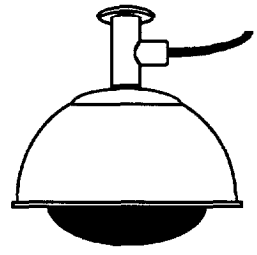


*U.S. Customary Measurements in italics are rounded off.

Outdoor Ceiling Mount - RHOCM

Required Parts

0200-0179-01 - Outdoor SpeedDome Housing Assembly, which ships with Outdoor SpeedDome, is required for these installation options.



Ceiling Mount Components (RHOCM)

RHOCM is an ordering vehicle for 0200-0163-01 - Outdoor Ceiling Mount w/Hardware, which contains the following items:

Description	Qty.	Part No.
Flange	1	1400-0058-01
Fitting, pipe tee	1	1417-0036-01
Nipple, short 1-1/2x 2	2	1417-0037-01
Anchor bolt, 1/4x2-1/4, w/hardware	4	2880-0011
Pipe sealant	1	1600-0095-01
Plug, 1-7/8 dia., 1" thick	1	0649-0685-01
RTV compound	1	1600-0001
Label, blank, paper, thermal	1	2450-0008-01
Adaptor, BNC, male to female	1	2113-0004
Nut, hex, 1.5" pipe w/seal	1	1417-0042-01

Procedure

Place the mounting flange [a] on the ceiling in the desired location. Then, using the flange as a template, mark locations for four bolt holes. Remove the flange.

Drill four 1/4-inch holes to the required depth. For each hole, screw two nuts onto an anchor bolt, with two threads of second nut extending over end of bolt to protect threads [b].

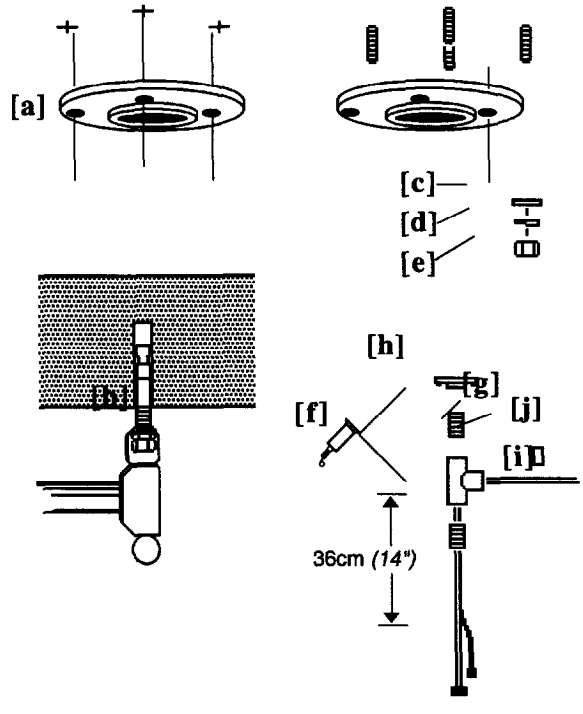
Hammer the bolt into the ceiling leaving 1-1/4 inch of bolt exposed. Remove nuts.

Bolt the mounting flange to the ceiling using a 1/2-inch flat washer [c], lock washer [d], and nut [e].

Apply pipe sealant to nipples [f], then screw nipples into the pipe tee [g].

Screw the entire assembly into the flange [h]. Then, feed the camera dome cables [i] through the center hole of the pipe tee.
Note: Approximately 36cm *(14")* of cable must exit the nipple. If so, insert plug [j] and seal with RTV.

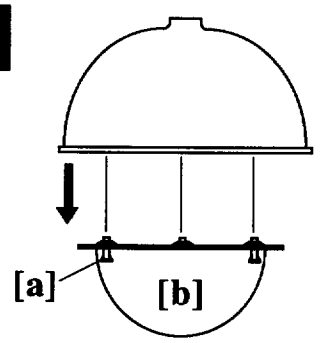
The mount is now ready for housing and chassis installation. See page Q-16.



*U.S. Customary Measurements in italics are rounded off.

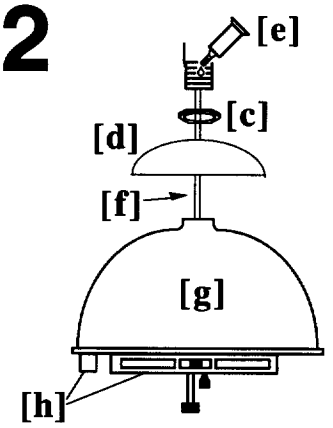
Housing and Chassis Installation

1



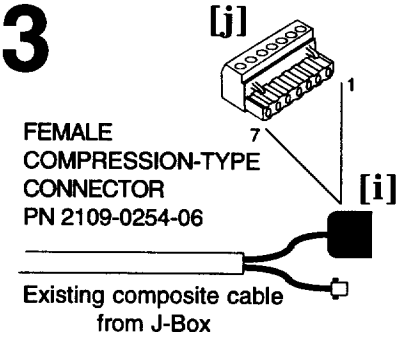
Using tamper-proof tool (T-20), remove captive bubble attachment screws [a] from housing, then remove bubble [b].

2



Screw 1.5" hex nut [c], with its white (or yellow) seal facing the cap [d], onto the pipe. Next, apply pipe sealant [e] to threads of elbow (or nipple, if this is a ceiling mount). Then feed the composite cable (f) through the SpeedDome cap [d] and through the housing [g]. Thread the dome housing onto the elbow (or nipple), compressing the cap against the housing until tight. Level as shown [h]. Apply RTV around the hex nut.

3

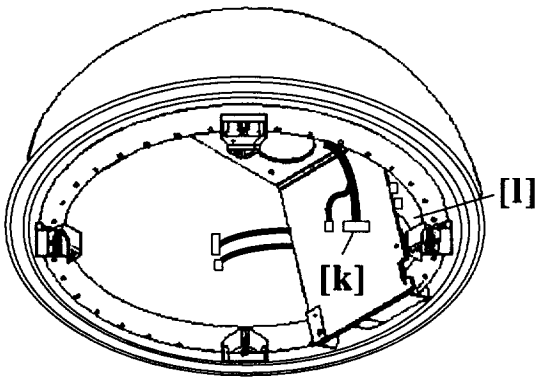


Referring to the chart below, replace the Cinch-Jones connector [i] with female compression connector [j] (located at P4 on the SpeedDome chassis).

Female Compression-Type Connector
PIN CONNECTIONS

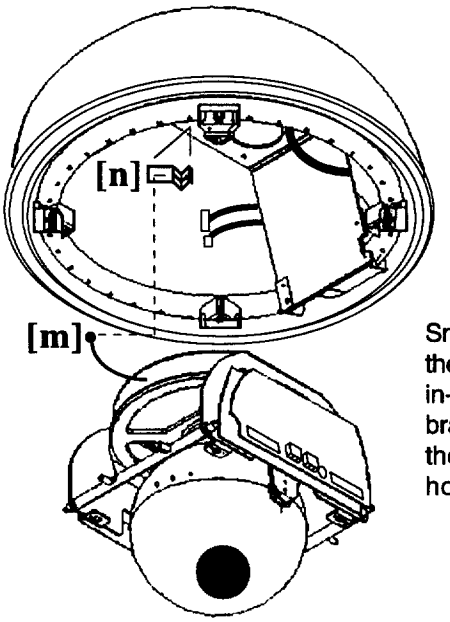
PIN		DESCRIPTION
1	brown	data out (Lo)
2	yellow	data out (Hi)
3	black	ac
4	red	Gnd.
5	white	ac
6	green	data in (Lo)
7	orange	data in (Hi)

4



Next, connect the composite cable compression connector [k] to J2, and the video connector to J1, on the Outdoor Interface Board [l], mounted on the outside of the bracket. Make sure when connecting to this board, that the screws of the compression connector are turned toward the inner black assembly. Tie wrap the composite cable to the bracket assembly to make way for chassis installation.

5



Snap the ball of the lanyard [m] in- to the bracket [n] at the top of the housing.

(continued on page Q-17)

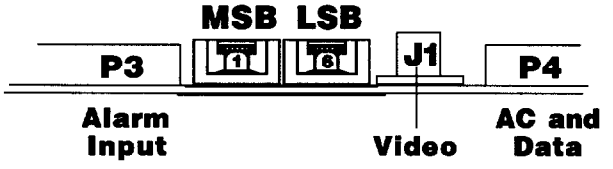
Housing and Chassis Installation, *continued*

6

Squeeze the spring-loaded ejector pins [n] together to seat the chassis in the corner receptacles [o]. The RS422 board [p] must face the SpeedDome interface board cables [q] inside the housing.

7

Set the thumbwheel switches [r] to the appropriate address. Example: for address 16,



8

Then, with the camera chassis hanging down, connect the video and data SpeedDome Interface Board cables [q] to their receptacles [s]. Do not use the alarm input connector [t].

9

To lock the chassis in the housing, squeeze ejector pins [u] and swing the chassis all the way up, while easing the cables into place. Release these pins into the remaining corner receptacles.

ENSURE EJECTOR PINS ARE FULLY INSERTED IN THE RECEPTACLES.

10

Snap the four pins of the skirt assembly [v] into the four chassis receptacles [w]. Then screw the attachment screws of the bubble [x] into the three housing receptacles [y].

11

To compensate for accidental jarring during assembly, recalibrate the dome as follows:

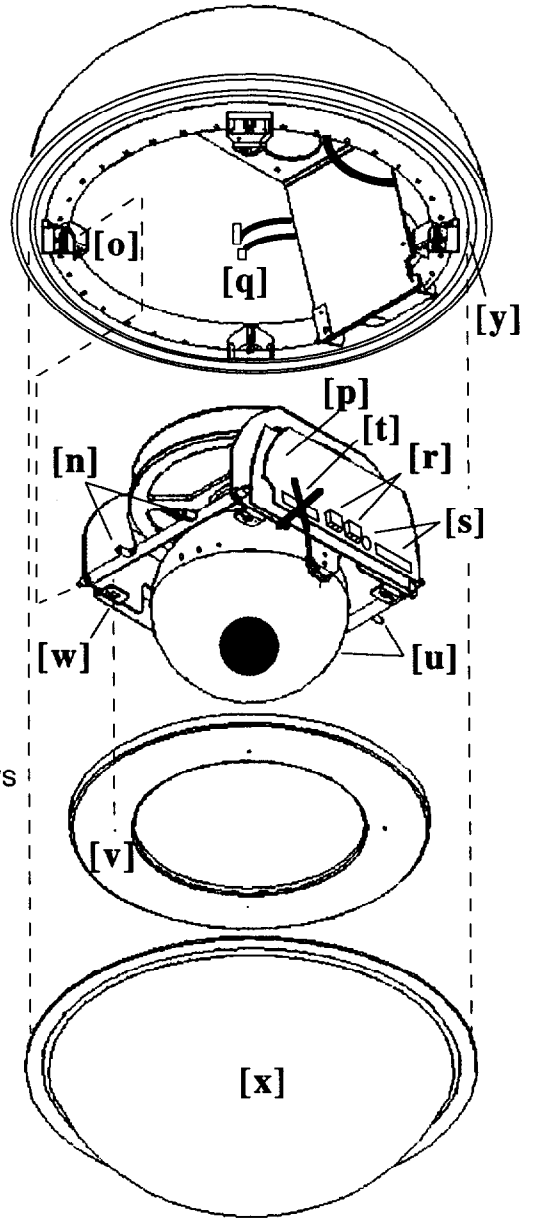
a. At the console, call up the dome address number.

b. Press and hold the fast key. Then—in order—press and hold the zoom out, focus far, and iris open keys.

When the dome begins to pan and tilt, release the keys. Once calibrated, which takes about a minute, the dome is ready for use.

DOME INSTALLATION IS COMPLETE.

To connect alarm to an outdoor SpeedDome, add lightning protection using a dataline protector, PN 4815-0021-01.



Fixed Cameras - RD500, RD500A, RD500B

Required Parts

There are three indoor mounting options to place fixed cameras in SpeedDome bubbles:
RD500 - uses an Indoor 2x2 Indoor Housing
RD500A - uses an Indoor Pendant Housing
RD500B - uses an Indoor Hard Mount

Description	Part No.	RD500 Qty.	RD500A Qty.	RD500B Qty.
2x2 Indoor Housing	0200-0176-01	1		
Pendant Indoor Housing	0200-0177-01		1	
Clamp Kit, Adjust. I-Beam	0351-0391-01		1	
Hard Mount Indoor Housing	0200-0178-01			1
Chassis, Fixed/Drone	0400-0529-01	1	1	1
Shroud, Fixed *	0500-4218-01	1	1	1
Bubble Kit, Smoked, 9-Inch	0351-0386-03	1	1	1

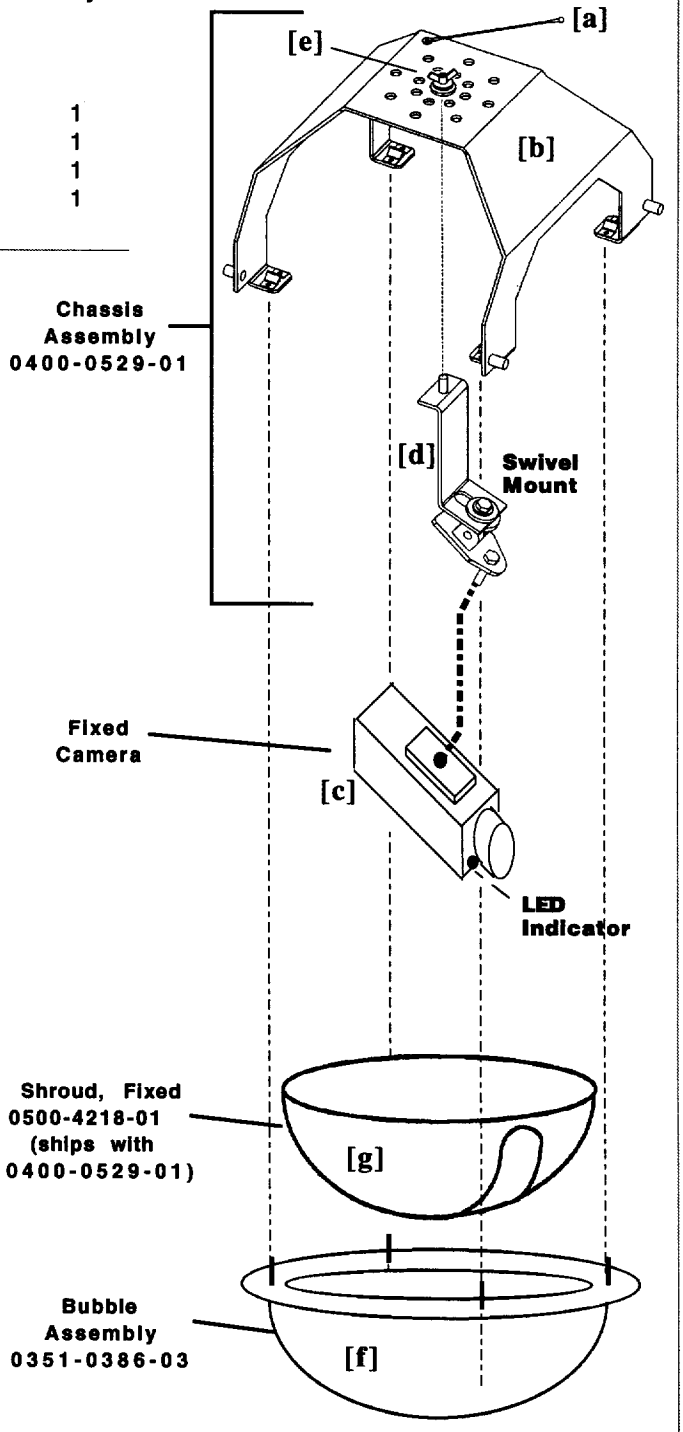
Procedure

1.
Snap the ball of the lanyard [a] into the bracket at the top of the housing. Then flex the chassis [b] to insert its mounting studs into the four corner mounts of the dome housing to be used: Hard Mount (page Q-1), 2x2 (page Q-4), or I-Beam (page Q-7).

2.
Attach the fixed camera [c] to the swivel mount. If necessary, move the adapter bracket [d] to turn the camera horizontally (it is not necessary to loosen the wing nut [e]). **Note:** Cover the camera's LED "on" indicator with electrical tape.

3.
Using a video test cable and portable monitor, adjust the camera's focus and iris using information provided with the camera. Then, connect camera video to the console room.

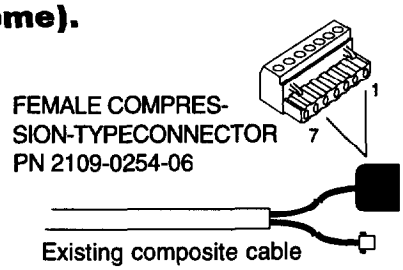
4.
With the studs of the bubble [f] aligned with the holes in the chassis, nest the shroud [g] in the bubble and turn its viewing slot so that the camera lens can see out. Then fasten the shroud and bubble assembly to the chassis by placing its studs against the chassis holes and pressing firmly on the bubble.



Cable Conversions

Adapting a Composite Cable for SpeedDome

Replace Cinch-Jones with female compression-type connector (supplied with dome).



Female Compression-Type Connector
PIN CONNECTIONS

PIN		DESCRIPTION
1	brown	data out (Lo)
2	yellow	data out (Hi)
3	black	ac
4	red	Gnd.
5	white	ac
6	green	data in (Lo)
7	orange	data in (Hi)

WARNING:
Disconnect cable from power source when performing cable conversions.

...or add Patch Cable.

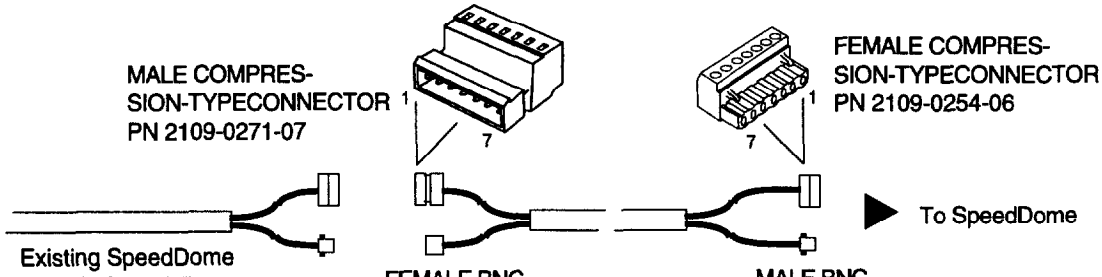
PATCH CABLE
PN 0650-0657-01

Extending a SpeedDome Cable

Add to a length of bulk composite cable, male and female compression-type connectors and male and female BNCs from SpeedDome Cable Conversion Kit, 0351-0403-01.

Male and Female
Compression-Type Connectors
PIN CONNECTIONS

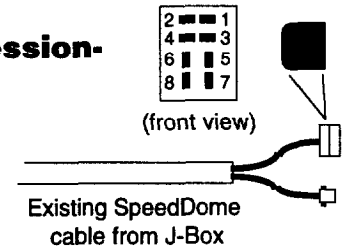
PIN		DESCRIPTION
1	brown	data out (Lo)
2	yellow	data out (Hi)
3	black	ac
4	red	Gnd.
5	white	ac
6	green	data in (Lo)
7	orange	data in (Hi)



Adapting a SpeedDome Cable for a Mini-Dome, etc.

Replace female compression-type connector with Cinch-Jones connector.

FEMALE
CINCH-JONES
PN 2107-0005-01



Female Cinch-Jones
PIN CONNECTIONS

PIN		DESCRIPTION
1	orange	data out (Hi)
2	green	data out (Lo)
3	black	ac
4	red	Gnd.
5	white	ac
6	drain	N.C.
7	brown	data in (Lo)
8	yellow	data in (Hi)

Appendix A: American Dynamics to SpeedDome Interconnection

In this section:

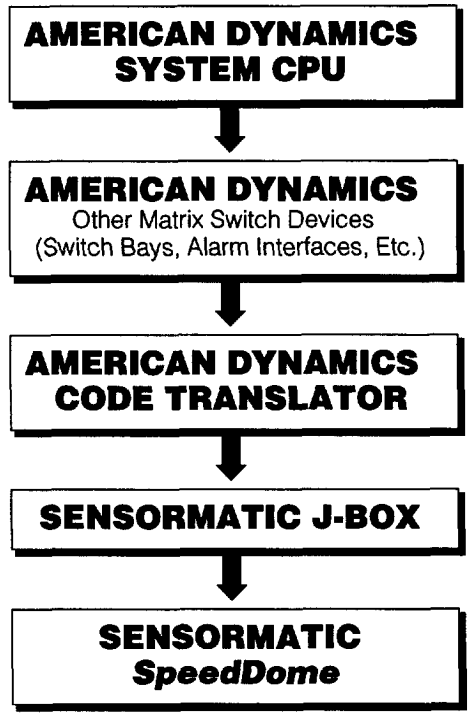
- Overview A-3
- American Dynamics 2083-02A Code Translator A-4
- Sensormatic RJ860 J-Box A-7
- Sensormatic RAS585/LSRA586LS Series SpeedDome A-8
- AD-to-Sensormatic Conversion Charts A-9
- Camera/J-Box/Switch Interconnection Drawing A-19

Overview

This appendix describes the interconnection and switch settings required to operate a Sensormatic Indoor SpeedDome camera device from an American Dynamics 2083-02A Code Translator. The 2083-02A is part of an American Dynamics switching system that also consists of a CPU and matrix switching devices. Figure 1 illustrates a typical system.

Note: This appendix presents information useful for the installation and troubleshooting of these devices; however, it does not discuss all aspects of their installation or calibration. Refer to the Installation and Service sections of this manual and the appropriate American Dynamics installation and service manuals for this information.

Figure 1. Block diagram of typical system



American Dynamics 2083-02A Code Translator

The American Dynamics 2083-02A Code Translator enables American Dynamics switching equipment to operate Sensormatic SpeedDomes and Mini Domes. The code translator provides two types of inputs and three types of outputs.

Note: Up to 16 cameras may be connected directly to a Code Translator assuming external power considerations are provided. The J-Box is optional.

Inputs

1. *Control (Manchester) Code*—Using the terminals marked *B*, *W*, and *S* on the translator's control code connector, up to 64 domes can be controlled by a 1650 switcher, or 32 domes by a 2150 switcher. Additional domes can be controlled through multiple 2083-02A units.
2. *High Speed Data Line*—The Data Line BNC connectors are marked *input* and *output* on the rear panel. The *input* connector receives control codes from a 1995 or 1996 CPU; the *output* connector is a loop-through connection that feeds other translators (or other devices).

   Note: If the 2083-02A is the last device in line, the output connector must be terminated with a 75 ohm resistor. Using the Data Line connections, a single translator can control up to four groups of 99 cameras from a possible 1024 using a 1996 CPU, or 512 using a 1995 CPU.

Outputs

1. *RS-422 Bidirectional Communications*—to a Sensormatic dome (or optionally through a J-Box).
2 *RS-232 communications*—for connection back to the CPU. When used, alarm contact closures on the dome will emulate an Alarm Interface unit.
3. *A Normally Open (NO) or Normally Closed (NC) contact closure* —from an internal alarm relay, triggered whenever a contact closure is made in a controlled dome.

Items 1 and 2 are discussed in greater detail in the following sections.

RS-422 Communications

The 2083-02A Code Translator has four output groups, each consisting of four individual outputs. Up to sixteen cameras may be controlled directly via these outputs by the 2083-02, or J-Boxes may be connected to these outputs and cascaded to allow the maximum number of outputs to be used.

Note: When using Control Code as the data input, each group used must be set as group one. Using control code, the maximum number of domes controlled by a 2083-02A is 64, and the addresses for the first 64 cameras are all in group one. No other addressing or number conversion is necessary.

Using a High Speed Data Line, each of the four output groups can control a block of 99 cameras, as defined by DIP switch settings associated with that group. A maximum of 396 (4 X 99) domes may be controlled by a single 2083-02A by using J-Boxes (outlined in Section 4.0). Groups need not be consecutive, and several groups may be set to the same bank of cameras to better utilize rear panel connections if necessary.

Actually, the code translator uses only 98 of the 99 cameras in each group. To preserve compatibility with previous Sensormatic dome devices, the 64th camera in each block must either be fixed or controlled via a Receiver Driver Unit (RDU). Another alternative is to use the pseudo numbering system available on the 1996 CPU to fill in those numerical gaps.

Table 1 provides 2083-02A Code Translator switch settings for each group to select the appropriate camera bank. The drawing on page 17 outlines connections from the 2083-02A Code Translator to other devices.

Table 1. 2083-02A output group switch settings

Video Input Camera Numbers	Data Bank	Switch Positions (0=OFF, 1=ON) A	B	C	D
1-99	A	0	0	0	0
100-198	B	0	0	0	1
199-297	C	0	0	1	0
298-396	D	0	0	1	1
397-495	E	0	1	0	0
496-594	F	0	1	0	1
595-693	G	0	1	1	0
694-792	H	0	1	1	1
793-891	I	1	0	0	0
892-990	J	1	0	0	1
991-1024	K	1	0	1	0

RS-232 Communications

Two RS-232 ports are provided on the rear panel, labeled *input* and *output*. The *output* port is for connection to the switcher control system or the *input* port of another 2083-02A or 2096 Alarm Interface unit. The *input* port accepts signals from other devices for cascading several units.

The RS-232 connectors are 8-pin modular RJ-45 type connectors. Pin designations for those connectors are shown in the Table 2 below.

Table 2. RS-232 connector pinouts

Pin	Input	Output
2	Shield	Shield
4	RCD	RCD
5	XMIT	XMIT
7	GROUND	GROUND
Remaining Pins—No Connection		

For the use and addressing of alarm inputs from SpeedDome devices, consult the Installation manual for the 2083-02A Code Translator. The installer is also advised to verify that the 2083-02A being used is set up for SpeedDome rather than Minidome operation where appropriate.

While the 2083-02A manual states that the baud rate for RS-232 communications may be set independently from the Speed-Dome baud rate (which *must* be set at 4800 baud), field experience indicates that this is not the case. To avoid problems (symptom would be the 2083-02A not outputting a data stream on any of the RS-422 lines) **it is recommended that the baud rate for all ports be set to 4800 baud internally** on S5 as indicated on Table 4 (this is the factory default):

Please note that with these settings the RS-232 port on the CPU must also be set to correspond with the interface, as do any other Alarm Interface units sharing that port (cascaded through or fed from a 2083-02A unit).

Sensormatic RJ860 J-Box

The Sensormatic RJ-860 J-Box serves either one or two functions depending on the design of the installation:

1. Provides low voltage (24Vac) power for up to ten domes when a central power distribution system is not used.
2. Acts as a RS-422 1 x 10 bidirectional distribution amplifier, to increase the available number of camera data ports. Units may be cascaded as needed.

The J-Box has two types of connections: a single spring-loaded terminal block for connection to a 2083-02A Code Translator, and ten 8-pin Cinch-Jones plugs for output to camera devices. The pinouts and interconnections for these connectors are shown on the Camera/J-Box/Switch Interconnection Drawing on page A-19.

Note: All ten Cinch-Jones Plugs are identical and interchangeable. The system Technical Specification Manual will identify a dome by J-Box and Port (connector) numbers for purposes of identification and troubleshooting only. Doing so has no effect on system functionality.

Many larger CCTV Systems will rely on a central power distribution system. If that is the case, the 28Vac connection from the J-Box will not be used, and a separate power line must be run from the Power Distribution System to the dome.

Sensormatic RAS585LS/RAS586LS Series SpeedDome

The Sensormatic SpeedDome is an integrated pan/tilt/zoom camera device. All connections to the outside world are through its *Unicard Interface Board.*

Data connections (to a J-Box or 2083-02A Code Translator) are designated on the Camera/J-Box/Switch Interconnection Drawing on page A-19. Power connections are either through the J-Box or another power source, such as a central power distribution system.

Certain functions may also be set on a bank of eight DIP switches designated S1 on the Unicard Interface Board. These switch settings are indicated in the table below. Note that the only difference between NTSC (USA) and PAL (Foreign) versions is the setting of S1 switch 2. The dome automatically adjusts to the power line frequency (50Hz or 60Hz).

Table 3. SpeedDome S1 DIP switch settings

Switch	Off	On	Default
1	Color	B&W	Camera Dependent
2	NTSC	PAL	Version Dependent
3	Lens Motor On	Lens Motor Off	OFF – Lens Motor On
4	Auto Iris	Manual Iris	OFF – Auto Iris
5	Line Lock Enable	Line Lock Disable	OFF – Line Lock Disable
6	Target fast	Quiet	OFF – Target fast
7*	Alarms (N.O)	Alarms (N.C)	
7†	Short Lens	Long Lens	
8	Indoor	Outdoor	

* Indoor domes.
† Outdoor domes.

Camera Addressing

Each camera must have its own unique address within the system. **Note:** It is essential that no two cameras be addressed the same.

The dome address is set via two thumbwheel switches on the RS-422 Interface Board. Since the address can only be a number from 01 to 99, numbers above this range are obtained by connecting the dome to a higher data bank (see Table 1). Table 4 is a conversion chart, showing dome addresses corresponding to camera numbers and the appropriate data bank.

American Dynamics-to-Sensormatic Conversion Charts

Table 4. SpeedDome Address Conversion Chart

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
1	1	1-99	1	1-64
2	2	1-99	2	1-64
3	3	1-99	3	1-64
4	4	1-99	4	1-64
5	5	1-99	5	1-64
6	6	1-99	6	1-64
7	7	1-99	7	1-64
8	8	1-99	8	1-64
9	9	1-99	9	1-64
10	10	1-99	10	1-64
11	11	1-99	11	1-64
12	12	1-99	12	1-64
13	13	1-99	13	1-64
14	14	1-99	14	1-64
15	15	1-99	15	1-64
16	16	1-99	16	1-64
17	17	1-99	17	1-64
18	18	1-99	18	1-64
19	19	1-99	19	1-64
20	20	1-99	20	1-64
21	21	1-99	21	1-64
22	22	1-99	22	1-64
23	23	1-99	23	1-64
24	24	1-99	24	1-64
25	25	1-99	25	1-64
26	26	1-99	26	1-64
27	27	1-99	27	1-64
28	28	1-99	28	1-64
29	29	1-99	29	1-64
30	30	1-99	30	1-64
31	31	1-99	31	1-64
32	32	1-99	32	1-64
33	33	1-99	33	1-64
34	34	1-99	34	1-64
35	35	1-99	35	1-64
36	36	1-99	36	1-64
37	37	1-99	37	1-64
38	38	1-99	38	1-64
39	39	1-99	39	1-64
40	40	1-99	40	1-64
41	41	1-99	41	1-64
42	42	1-99	42	1-64
43	43	1-99	43	1-64
44	44	1-99	44	1-64
45	45	1-99	45	1-64
46	46	1-99	46	1-64
47	47	1-99	47	1-64
48	48	1-99	48	1-64
49	49	1-99	49	1-64
50	50	1-99	50	1-64
51	51	1-99	51	1-64
52	52	1-99	52	1-64
53	53	1-99	53	1-64
54	54	1-99	54	1-64
55	55	1-99	55	1-64
56	56	1-99	56	1-64
57	57	1-99	57	1-64
58	58	1-99	58	1-64
59	59	1-99	59	1-64
60	60	1-99	60	1-64
61	61	1-99	61	1-64
62	62	1-99	62	1-64
63	63	1-99	63	1-64
64	NOT USED	1-99	NOT USED	1-64

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
65	65	1-99	1	65-128
66	66	1-99	2	65-128
67	67	1-99	3	65-128
68	68	1-99	4	65-128
69	69	1-99	5	65-128
70	70	1-99	6	65-128
71	71	1-99	7	65-128
72	72	1-99	8	65-128
73	73	1-99	9	65-128
74	74	1-99	10	65-128
75	75	1-99	11	65-128
76	76	1-99	12	65-128
77	77	1-99	13	65-128
78	78	1-99	14	65-128
79	79	1-99	15	65-128
80	80	1-99	16	65-128
81	81	1-99	17	65-128
82	82	1-99	18	65-128
83	83	1-99	19	65-128
84	84	1-99	20	65-128
85	85	1-99	21	65-128
86	86	1-99	22	65-128
87	87	1-99	23	65-128
88	88	1-99	24	65-128
89	89	1-99	25	65-128
90	90	1-99	26	65-128
91	91	1-99	27	65-128
92	92	1-99	28	65-128
93	93	1-99	29	65-128
94	94	1-99	30	65-128
95	95	1-99	31	65-128
96	96	1-99	32	65-128
97	97	1-99	33	65-128
98	98	1-99	34	65-128
99	99	1-99	35	65-128
100	1	100-198	36	65-128
101	2	100-198	37	65-128
102	3	100-198	38	65-128
103	4	100-198	39	65-128
104	5	100-198	40	65-128
105	6	100-198	41	65-128
106	7	100-198	42	65-128
107	8	100-198	43	65-128
108	9	100-198	44	65-128
109	10	100-198	45	65-128
110	11	100-198	46	65-128
111	12	100-198	47	65-128
112	13	100-198	48	65-128
113	14	100-198	49	65-128
114	15	100-198	50	65-128
115	16	100-198	51	65-128
116	17	100-198	52	65-128
117	18	100-198	53	65-128
118	19	100-198	54	65-128
119	20	100-198	55	65-128
120	21	100-198	56	65-128
121	22	100-198	57	65-128
122	23	100-198	58	65-128
123	24	100-198	59	65-128
124	25	100-198	60	65-128
125	26	100-198	61	65-128
126	27	100-198	62	65-128
127	28	100-198	63	65-128
128	29	100-198	NOT USED	65-128

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
129	30	100-198	1	129-192
130	31	100-198	2	129-192
131	32	100-198	3	129-192
132	33	100-198	4	129-192
133	34	100-198	5	129-192
134	35	100-198	6	129-192
135	36	100-198	7	129-192
136	37	100-198	8	129-192
137	38	100-198	9	129-192
138	39	100-198	10	129-192
139	40	100-198	11	129-192
140	41	100-198	12	129-192
141	42	100-198	13	129-192
142	43	100-198	14	129-192
143	44	100-198	15	129-192
144	45	100-198	16	129-192
145	46	100-198	17	129-192
146	47	100-198	18	129-192
147	48	100-198	19	129-192
148	49	100-198	20	129-192
149	50	100-198	21	129-192
150	51	100-198	22	129-192
151	52	100-198	23	129-192
152	53	100-198	24	129-192
153	54	100-198	25	129-192
154	55	100-198	26	129-192
155	56	100-198	27	129-192
156	57	100-198	28	129-192
157	58	100-198	29	129-192
158	59	100-198	30	129-192
159	60	100-198	31	129-192
160	61	100-198	32	129-192
161	62	100-198	33	129-192
162	63	100-198	34	129-192
163	NOT USED	100-198	35	129-192
164	65	100-198	36	129-192
165	66	100-198	37	129-192
166	67	100-198	38	129-192
167	68	100-198	39	129-192
168	69	100-198	40	129-192
169	70	100-198	41	129-192
170	71	100-198	42	129-192
171	72	100-198	43	129-192
172	73	100-198	44	129-192
173	74	100-198	45	129-192
174	75	100-198	46	129-192
175	76	100-198	47	129-192
176	77	100-198	48	129-192
177	78	100-198	49	129-192
178	79	100-198	50	129-192
179	80	100-198	51	129-192
180	81	100-198	52	129-192
181	82	100-198	53	129-192
182	83	100-198	54	129-192
183	84	100-198	55	129-192
184	85	100-198	56	129-192
185	86	100-198	57	129-192
186	87	100-198	58	129-192
187	88	100-198	59	129-192
188	89	100-198	60	129-192
189	90	100-198	61	129-192
190	91	100-198	62	129-192
191	92	100-198	63	129-192
192	93	100-198	NOT USED	129-192

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
193	94	100-198	1	193-256
194	95	100-198	2	193-256
195	96	100-198	3	193-256
196	97	100-198	4	193-256
197	98	100-198	5	193-256
198	99	100-198	6	193-256
199	1	199-297	7	193-256
200	2	199-297	8	193-256
201	3	199-297	9	193-256
202	4	199-297	10	193-256
203	5	199-297	11	193-256
204	6	199-297	12	193-256
205	7	199-297	13	193-256
206	8	199-297	14	193-256
207	9	199-297	15	193-256
208	10	199-297	16	193-256
209	11	199-297	17	193-256
210	12	199-297	18	193-256
211	13	199-297	19	193-256
212	14	199-297	20	193-256
213	15	199-297	21	193-256
214	16	199-297	22	193-256
215	17	199-297	23	193-256
216	18	199-297	24	193-256
217	19	199-297	25	193-256
218	20	199-297	26	193-256
219	21	199-297	27	193-256
220	22	199-297	28	193-256
221	23	199-297	29	193-256
222	24	199-297	30	193-256
223	25	199-297	31	193-256
224	26	199-297	32	193-256
225	27	199-297	33	193-256
226	28	199-297	34	193-256
227	29	199-297	35	193-256
228	30	199-297	36	193-256
229	31	199-297	37	193-256
230	32	199-297	38	193-256
231	33	199-297	39	193-256
232	34	199-297	40	193-256
233	35	199-297	41	193-256
234	36	199-297	42	193-256
235	37	199-297	43	193-256
236	38	199-297	44	193-256
237	39	199-297	45	193-256
238	40	199-297	46	193-256
239	41	199-297	47	193-256
240	42	199-297	48	193-256
241	43	199-297	49	193-256
242	44	199-297	50	193-256
243	45	199-297	51	193-256
244	46	199-297	52	193-256
245	47	199-297	53	193-256
246	48	199-297	54	193-256
247	49	199-297	55	193-256
248	50	199-297	56	193-256
249	51	199-297	57	193-256
250	52	199-297	58	193-256
251	53	199-297	59	193-256
252	54	199-297	60	193-256
253	55	199-297	61	193-256
254	56	199-297	62	193-256
255	57	199-297	63	193-256
256	58	199-297	NOT USED	193-256

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
257	59	199-297	1	257-320
258	60	199-297	2	257-320
259	61	199-297	3	257-320
260	62	199-297	4	257-320
261	63	199-297	5	257-320
262	NOT USED	199-297	6	257-320
263	65	199-297	7	257-320
264	66	199-297	8	257-320
265	67	199-297	9	257-320
266	68	199-297	10	257-320
267	69	199-297	11	257-320
268	70	199-297	12	257-320
269	71	199-297	13	257-320
270	72	199-297	14	257-320
271	73	199-297	15	257-320
272	74	199-297	16	257-320
273	75	199-297	17	257-320
274	76	199-297	18	257-320
275	77	199-297	19	257-320
276	78	199-297	20	257-320
277	79	199-297	21	257-320
278	80	199-297	22	257-320
279	81	199-297	23	257-320
280	82	199-297	24	257-320
281	83	199-297	25	257-320
282	84	199-297	26	257-320
283	85	199-297	27	257-320
284	86	199-297	28	257-320
285	87	199-297	29	257-320
286	88	199-297	30	257-320
287	89	199-297	31	257-320
288	90	199-297	32	257-320
289	91	199-297	33	257-320
290	92	199-297	34	257-320
291	93	199-297	35	257-320
292	94	199-297	36	257-320
293	95	199-297	37	257-320
294	96	199-297	38	257-320
295	97	199-297	39	257-320
296	98	199-297	40	257-320
297	99	199-297	41	257-320
298	1	298-396	42	257-320
299	2	298-396	43	257-320
300	3	298-396	44	257-320
301	4	298-396	45	257-320
302	5	298-396	46	257-320
303	6	298-396	47	257-320
304	7	298-396	48	257-320
305	8	298-396	49	257-320
306	9	298-396	50	257-320
307	10	298-396	51	257-320
308	11	298-396	52	257-320
309	12	298-396	53	257-320
310	13	298-396	54	257-320
311	14	298-396	55	257-320
312	15	298-396	56	257-320
313	16	298-396	57	257-320
314	17	298-396	58	257-320
315	18	298-396	59	257-320
316	19	298-396	60	257-320
317	20	298-396	61	257-320
318	21	298-396	62	257-320
319	22	298-396	63	257-320
320	23	298-396	NOT USED	257-320

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
321	24	298-396	1	321-384
322	25	298-396	2	321-384
323	26	298-396	3	321-384
324	27	298-396	4	321-384
325	28	298-396	5	321-384
326	29	298-396	6	321-384
327	30	298-396	7	321-384
328	31	298-396	8	321-384
329	32	298-396	9	321-384
330	33	298-396	10	321-384
331	34	298-396	11	321-384
332	35	298-396	12	321-384
333	36	298-396	13	321-384
334	37	298-396	14	321-384
335	38	298-396	15	321-384
336	39	298-396	16	321-384
337	40	298-396	17	321-384
338	41	298-396	18	321-384
339	42	298-396	19	321-384
340	43	298-396	20	321-384
341	44	298-396	21	321-384
342	45	298-396	22	321-384
343	46	298-396	23	321-384
344	47	298-396	24	321-384
345	48	298-396	25	321-384
346	49	298-396	26	321-384
347	50	298-396	27	321-384
348	51	298-396	28	321-384
349	52	298-396	29	321-384
350	53	298-396	30	321-384
351	54	298-396	31	321-384
352	55	298-396	32	321-384
353	56	298-396	33	321-384
354	57	298-396	34	321-384
355	58	298-396	35	321-384
356	59	298-396	36	321-384
357	60	298-396	37	321-384
358	61	298-396	38	321-384
359	62	298-396	39	321-384
360	63	298-396	40	321-384
361	NOT USED	298-396	41	321-384
362	65	298-396	42	321-384
363	66	298-396	43	321-384
364	67	298-396	44	321-384
365	68	298-396	45	321-384
366	69	298-396	46	321-384
367	70	298-396	47	321-384
368	71	298-396	48	321-384
369	72	298-396	49	321-384
370	73	298-396	50	321-384
371	74	298-396	51	321-384
372	75	298-396	52	321-384
373	76	298-396	53	321-384
374	77	298-396	54	321-384
375	78	298-396	55	321-384
376	79	298-396	56	321-384
377	80	298-396	57	321-384
378	81	298-396	58	321-384
379	82	298-396	59	321-384
380	83	298-396	60	321-384
381	84	298-396	61	321-384
382	85	298-396	62	321-384
383	86	298-396	63	321-384
384	87	298-396	NOT USED	321-384

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
385	88	298-396	1	385-448
386	89	298-396	2	385-448
387	90	298-396	3	385-448
388	91	298-396	4	385-448
389	92	298-396	5	385-448
390	93	298-396	6	385-448
391	94	298-396	7	385-448
392	95	298-396	8	385-448
393	96	298-396	9	385-448
394	97	298-396	10	385-448
395	98	298-396	11	385-448
396	99	298-396	12	385-448
397	1	397-495	13	385-448
398	2	397-495	14	385-448
399	3	397-495	15	385-448
400	4	397-495	16	385-448
401	5	397-495	17	385-448
402	6	397-495	18	385-448
403	7	397-495	19	385-448
404	8	397-495	20	385-448
405	9	397-495	21	385-448
406	10	397-495	22	385-448
407	11	397-495	23	385-448
408	12	397-495	24	385-448
409	13	397-495	25	385-448
410	14	397-495	26	385-448
411	15	397-495	27	385-448
412	16	397-495	28	385-448
413	17	397-495	29	385-448
414	18	397-495	30	385-448
415	19	397-495	31	385-448
416	20	397-495	32	385-448
417	21	397-495	33	385-448
418	22	397-495	34	385-448
419	23	397-495	35	385-448
420	24	397-495	36	385-448
421	25	397-495	37	385-448
422	26	397-495	38	385-448
423	27	397-495	39	385-448
424	28	397-495	40	385-448
425	29	397-495	41	385-448
426	30	397-495	42	385-448
427	31	397-495	43	385-448
428	32	397-495	44	385-448
429	33	397-495	45	385-448
430	34	397-495	46	385-448
431	35	397-495	47	385-448
432	36	397-495	48	385-448
433	37	397-495	49	385-448
434	38	397-495	50	385-448
435	39	397-495	51	385-448
436	40	397-495	52	385-448
437	41	397-495	53	385-448
438	42	397-495	54	385-448
439	43	397-495	55	385-448
440	44	397-495	56	385-448
441	45	397-495	57	385-448
442	46	397-495	58	385-448
443	47	397-495	59	385-448
444	48	397-495	60	385-448
445	49	397-495	61	385-448
446	50	397-495	62	385-448
447	51	397-495	63	385-448
448	52	397-495	NOT USED	385-448

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
449	53	397-495	1	449-512
450	54	397-495	2	449-512
451	55	397-495	3	449-512
452	56	397-495	4	449-512
453	57	397-495	5	449-512
454	58	397-495	6	449-512
455	59	397-495	7	449-512
456	60	397-495	8	449-512
457	61	397-495	9	449-512
458	62	397-495	10	449-512
459	63	397-495	11	449-512
460	NOT USED	397-495	12	449-512
461	65	397-495	13	449-512
462	66	397-495	14	449-512
463	67	397-495	15	449-512
464	68	397-495	16	449-512
465	69	397-495	17	449-512
466	70	397-495	18	449-512
467	71	397-495	19	449-512
468	72	397-495	20	449-512
469	73	397-495	21	449-512
470	74	397-495	22	449-512
471	75	397-495	23	449-512
472	76	397-495	24	449-512
473	77	397-495	25	449-512
474	78	397-495	26	449-512
475	79	397-495	27	449-512
476	80	397-495	28	449-512
477	81	397-495	29	449-512
478	82	397-495	30	449-512
479	83	397-495	31	449-512
480	84	397-495	32	449-512
481	85	397-495	33	449-512
482	86	397-495	34	449-512
483	87	397-495	35	449-512
484	88	397-495	36	449-512
485	89	397-495	37	449-512
486	90	397-495	38	449-512
487	91	397-495	39	449-512
488	92	397-495	40	449-512
489	93	397-495	41	449-512
490	94	397-495	42	449-512
491	95	397-495	43	449-512
492	96	397-495	44	449-512
493	97	397-495	45	449-512
494	98	397-495	46	449-512
495	99	397-495	47	449-512
496	1	496-594	48	449-512
497	2	496-594	49	449-512
498	3	496-594	50	449-512
499	4	496-594	51	449-512
500	5	496-594	52	449-512
501	6	496-594	53	449-512
502	7	496-594	54	449-512
503	8	496-594	55	449-512
504	9	496-594	56	449-512
505	10	496-594	57	449-512
506	11	496-594	58	449-512
507	12	496-594	59	449-512
508	13	496-594	60	449-512
509	14	496-594	61	449-512
510	15	496-594	62	449-512
511	16	496-594	63	449-512
512	17	496-594	NOT USED	449-512

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
513	18	496-594	1	513-576
514	19	496-594	2	513-576
515	20	496-594	3	513-576
516	21	496-594	4	513-576
517	22	496-594	5	513-576
518	23	496-594	6	513-576
519	24	496-594	7	513-576
520	25	496-594	8	513-576
521	26	496-594	9	513-576
522	27	496-594	10	513-576
523	28	496-594	11	513-576
524	29	496-594	12	513-576
525	30	496-594	13	513-576
526	31	496-594	14	513-576
527	32	496-594	15	513-576
528	33	496-594	16	513-576
529	34	496-594	17	513-576
530	35	496-594	18	513-576
531	36	496-594	19	513-576
532	37	496-594	20	513-576
533	38	496-594	21	513-576
534	39	496-594	22	513-576
535	40	496-594	23	513-576
536	41	496-594	24	513-576
537	42	496-594	25	513-576
538	43	496-594	26	513-576
539	44	496-594	27	513-576
540	45	496-594	28	513-576
541	46	496-594	29	513-576
542	47	496-594	30	513-576
543	48	496-594	31	513-576
544	49	496-594	32	513-576
545	50	496-594	33	513-576
546	51	496-594	34	513-576
547	52	496-594	35	513-576
548	53	496-594	36	513-576
549	54	496-594	37	513-576
550	55	496-594	38	513-576
551	56	496-594	39	513-576
552	57	496-594	40	513-576
553	58	496-594	41	513-576
554	59	496-594	42	513-576
555	60	496-594	43	513-576
556	61	496-594	44	513-576
557	62	496-594	45	513-576
558	63	496-594	46	513-576
559	NOT USED	496-594	47	513-576
560	65	496-594	48	513-576
561	66	496-594	49	513-576
562	67	496-594	50	513-576
563	68	496-594	51	513-576
564	69	496-594	52	513-576
565	70	496-594	53	513-576
566	71	496-594	54	513-576
567	72	496-594	55	513-576
568	73	496-594	56	513-576
569	74	496-594	57	513-576
570	75	496-594	58	513-576
571	76	496-594	59	513-576
572	77	496-594	60	513-576
573	78	496-594	61	513-576
574	79	496-594	62	513-576
575	80	496-594	63	513-576
576	81	496-594	NOT USED	513-576

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
577	82	496-594	1	577-640
578	83	496-594	2	577-640
579	84	496-594	3	577-640
580	85	496-594	4	577-640
581	86	496-594	5	577-640
582	87	496-594	6	577-640
583	88	496-594	7	577-640
584	89	496-594	8	577-640
585	90	496-594	9	577-640
586	91	496-594	10	577-640
587	92	496-594	11	577-640
588	93	496-594	12	577-640
589	94	496-594	13	577-640
590	95	496-594	14	577-640
591	96	496-594	15	577-640
592	97	496-594	16	577-640
593	98	496-594	17	577-640
594	99	496-594	18	577-640
595	1	595-693	19	577-640
596	2	595-693	20	577-640
597	3	595-693	21	577-640
598	4	595-693	22	577-640
599	5	595-693	23	577-640
600	6	595-693	24	577-640
601	7	595-693	25	577-640
602	8	595-693	26	577-640
603	9	595-693	27	577-640
604	10	595-693	28	577-640
605	11	595-693	29	577-640
606	12	595-693	30	577-640
607	13	595-693	31	577-640
608	14	595-693	32	577-640
609	15	595-693	33	577-640
610	16	595-693	34	577-640
611	17	595-693	35	577-640
612	18	595-693	36	577-640
613	19	595-693	37	577-640
614	20	595-693	38	577-640
615	21	595-693	39	577-640
616	22	595-693	40	577-640
617	23	595-693	41	577-640
618	24	595-693	42	577-640
619	25	595-693	43	577-640
620	26	595-693	44	577-640
621	27	595-693	45	577-640
622	28	595-693	46	577-640
623	29	595-693	47	577-640
624	30	595-693	48	577-640
625	31	595-693	49	577-640
626	32	595-693	50	577-640
627	33	595-693	51	577-640
628	34	595-693	52	577-640
629	35	595-693	53	577-640
630	36	595-693	54	577-640
631	37	595-693	55	577-640
632	38	595-693	56	577-640
633	39	595-693	57	577-640
634	40	595-693	58	577-640
635	41	595-693	59	577-640
636	42	595-693	60	577-640
637	43	595-693	61	577-640
638	44	595-693	62	577-640
639	45	595-693	63	577-640
640	46	595-693	NOT USED	577-640

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
641	47	595-693	1	641-704
642	48	595-693	2	641-704
643	49	595-693	3	641-704
644	50	595-693	4	641-704
645	51	595-693	5	641-704
646	52	595-693	6	641-704
647	53	595-693	7	641-704
648	54	595-693	8	641-704
649	55	595-693	9	641-704
650	56	595-693	10	641-704
651	57	595-693	11	641-704
652	58	595-693	12	641-704
653	59	595-693	13	641-704
654	60	595-693	14	641-704
655	61	595-693	15	641-704
656	62	595-693	16	641-704
657	63	595-693	17	641-704
658	NOT USED	595-693	18	641-704
659	65	595-693	19	641-704
660	66	595-693	20	641-704
661	67	595-693	21	641-704
662	68	595-693	22	641-704
663	69	595-693	23	641-704
664	70	595-693	24	641-704
665	71	595-693	25	641-704
666	72	595-693	26	641-704
667	73	595-693	27	641-704
668	74	595-693	28	641-704
669	75	595-693	29	641-704
670	76	595-693	30	641-704
671	77	595-693	31	641-704
672	78	595-693	32	641-704
673	79	595-693	33	641-704
674	80	595-693	34	641-704
675	81	595-693	35	641-704
676	82	595-693	36	641-704
677	83	595-693	37	641-704
678	84	595-693	38	641-704
679	85	595-693	39	641-704
680	86	595-693	40	641-704
681	87	595-693	41	641-704
682	88	595-693	42	641-704
683	89	595-693	43	641-704
684	90	595-693	44	641-704
685	91	595-693	45	641-704
686	92	595-693	46	641-704
687	93	595-693	47	641-704
688	94	595-693	48	641-704
689	95	595-693	49	641-704
690	96	595-693	50	641-704
691	97	595-693	51	641-704
692	98	595-693	52	641-704
693	99	595-693	53	641-704
694	1	694-792	54	641-704
695	2	694-792	55	641-704
696	3	694-792	56	641-704
697	4	694-792	57	641-704
698	5	694-792	58	641-704
699	6	694-792	59	641-704
700	7	694-792	60	641-704
701	8	694-792	61	641-704
702	9	694-792	62	641-704
703	10	694-792	63	641-704
704	11	694-792	NOT USED	641-704

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
705	12	694-792	1	705-768
706	13	694-792	2	705-768
707	14	694-792	3	705-768
708	15	694-792	4	705-768
709	16	694-792	5	705-768
710	17	694-792	6	705-768
711	18	694-792	7	705-768
712	19	694-792	8	705-768
713	20	694-792	9	705-768
714	21	694-792	10	705-768
715	22	694-792	11	705-768
716	23	694-792	12	705-768
717	24	694-792	13	705-768
718	25	694-792	14	705-768
719	26	694-792	15	705-768
720	27	694-792	16	705-768
721	28	694-792	17	705-768
722	29	694-792	18	705-768
723	30	694-792	19	705-768
724	31	694-792	20	705-768
725	32	694-792	21	705-768
726	33	694-792	22	705-768
727	34	694-792	23	705-768
728	35	694-792	24	705-768
729	36	694-792	25	705-768
730	37	694-792	26	705-768
731	38	694-792	27	705-768
732	39	694-792	28	705-768
733	40	694-792	29	705-768
734	41	694-792	30	705-768
735	42	694-792	31	705-768
736	43	694-792	32	705-768
737	44	694-792	33	705-768
738	45	694-792	34	705-768
739	46	694-792	35	705-768
740	47	694-792	36	705-768
741	48	694-792	37	705-768
742	49	694-792	38	705-768
743	50	694-792	39	705-768
744	51	694-792	40	705-768
745	52	694-792	41	705-768
746	53	694-792	42	705-768
747	54	694-792	43	705-768
748	55	694-792	44	705-768
749	56	694-792	45	705-768
750	57	694-792	46	705-768
751	58	694-792	47	705-768
752	59	694-792	48	705-768
753	60	694-792	49	705-768
754	61	694-792	50	705-768
755	62	694-792	51	705-768
756	63	694-792	52	705-768
757	NOT USED	694-792	53	705-768
758	65	694-792	54	705-768
759	66	694-792	55	705-768
760	67	694-792	56	705-768
761	68	694-792	57	705-768
762	69	694-792	58	705-768
763	70	694-792	59	705-768
764	71	694-792	60	705-768
765	72	694-792	61	705-768
766	73	694-792	62	705-768
767	74	694-792	63	705-768
768	75	694-792	NOT USED	705-768

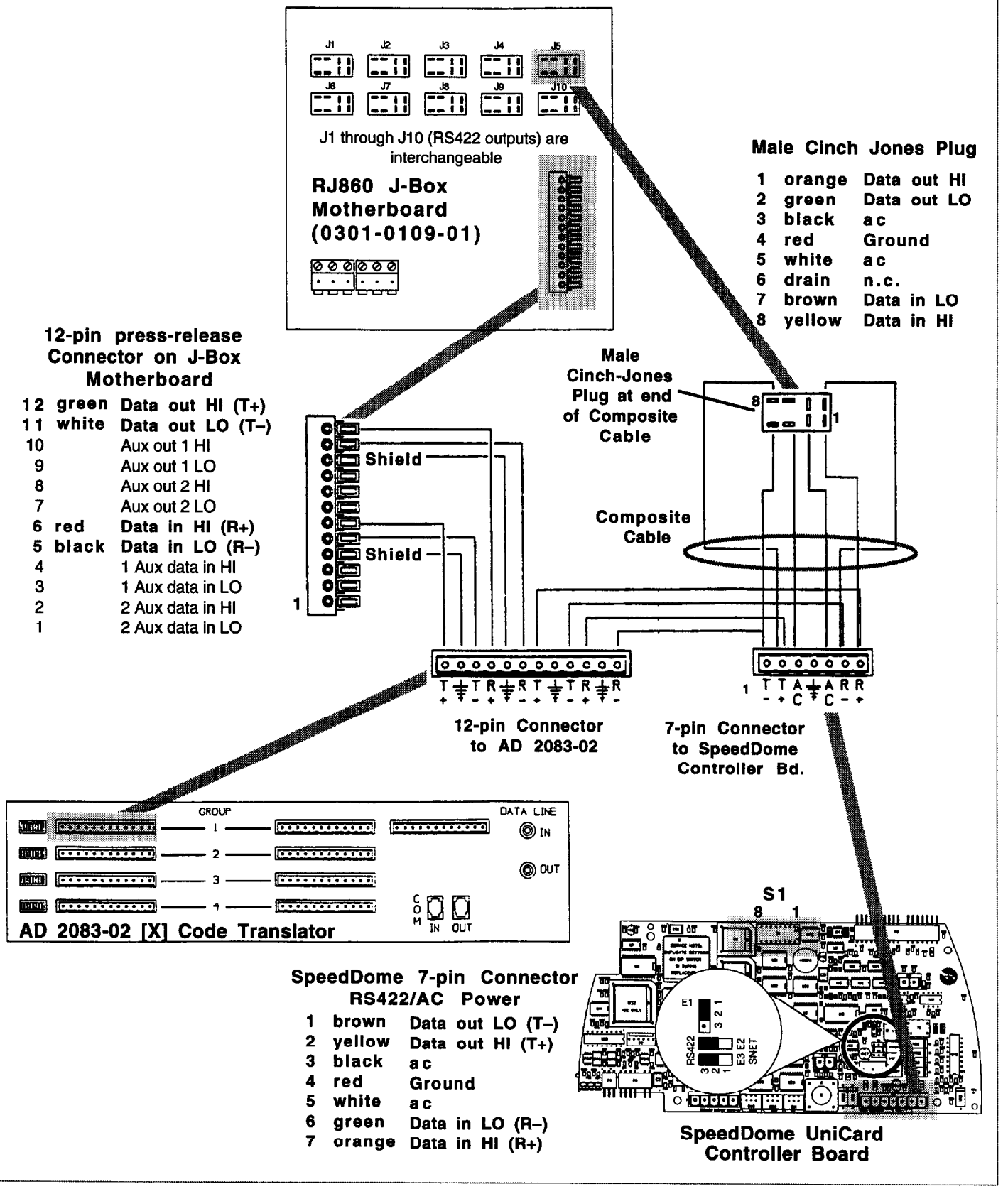
Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
769	76	694-792	1	769-832
770	77	694-792	2	769-832
771	78	694-792	3	769-832
772	79	694-792	4	769-832
773	80	694-792	5	769-832
774	81	694-792	6	769-832
775	82	694-792	7	769-832
776	83	694-792	8	769-832
777	84	694-792	9	769-832
778	85	694-792	10	769-832
779	86	694-792	11	769-832
780	87	694-792	12	769-832
781	88	694-792	13	769-832
782	89	694-792	14	769-832
783	90	694-792	15	769-832
784	91	694-792	16	769-832
785	92	694-792	17	769-832
786	93	694-792	18	769-832
787	94	694-792	19	769-832
788	95	694-792	20	769-832
789	96	694-792	21	769-832
790	97	694-792	22	769-832
791	98	694-792	23	769-832
792	99	694-792	24	769-832
793	1	793-891	25	769-832
794	2	793-891	26	769-832
795	3	793-891	27	769-832
796	4	793-891	28	769-832
797	5	793-891	29	769-832
798	6	793-891	30	769-832
799	7	793-891	31	769-832
800	8	793-891	32	769-832
801	9	793-891	33	769-832
802	10	793-891	34	769-832
803	11	793-891	35	769-832
804	12	793-891	36	769-832
805	13	793-891	37	769-832
806	14	793-891	38	769-832
807	15	793-891	39	769-832
808	16	793-891	40	769-832
809	17	793-891	41	769-832
810	18	793-891	42	769-832
811	19	793-891	43	769-832
812	20	793-891	44	769-832
813	21	793-891	45	769-832
814	22	793-891	46	769-832
815	23	793-891	47	769-832
816	24	793-891	48	769-832
817	25	793-891	49	769-832
818	26	793-891	50	769-832
819	27	793-891	51	769-832
820	28	793-891	52	769-832
821	29	793-891	53	769-832
822	30	793-891	54	769-832
823	31	793-891	55	769-832
824	32	793-891	56	769-832
825	33	793-891	57	769-832
826	34	793-891	58	769-832
827	35	793-891	59	769-832
828	36	793-891	60	769-832
829	37	793-891	61	769-832
830	38	793-891	62	769-832
831	39	793-891	63	769-832
832	40	793-891	NOT USED	769-832

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
833	41	793-891	1	833-896
834	42	793-891	2	833-896
835	43	793-891	3	833-896
836	44	793-891	4	833-896
837	45	793-891	5	833-896
838	46	793-891	6	833-896
839	47	793-891	7	833-896
840	48	793-891	8	833-896
841	49	793-891	9	833-896
842	50	793-891	10	833-896
843	51	793-891	11	833-896
844	52	793-891	12	833-896
845	53	793-891	13	833-896
846	54	793-891	14	833-896
847	55	793-891	15	833-896
848	56	793-891	16	833-896
849	57	793-891	17	833-896
850	58	793-891	18	833-896
851	59	793-891	19	833-896
852	60	793-891	20	833-896
853	61	793-891	21	833-896
854	62	793-891	22	833-896
855	63	793-891	23	833-896
856	NOT USED	793-891	24	833-896
857	65	793-891	25	833-896
858	66	793-891	26	833-896
859	67	793-891	27	833-896
860	68	793-891	28	833-896
861	69	793-891	29	833-896
862	70	793-891	30	833-896
863	71	793-891	31	833-896
864	72	793-891	32	833-896
865	73	793-891	33	833-896
866	74	793-891	34	833-896
867	75	793-891	35	833-896
868	76	793-891	36	833-896
869	77	793-891	37	833-896
870	78	793-891	38	833-896
871	79	793-891	39	833-896
872	80	793-891	40	833-896
873	81	793-891	41	833-896
874	82	793-891	42	833-896
875	83	793-891	43	833-896
876	84	793-891	44	833-896
877	85	793-891	45	833-896
878	86	793-891	46	833-896
879	87	793-891	47	833-896
880	88	793-891	48	833-896
881	89	793-891	49	833-896
882	90	793-891	50	833-896
883	91	793-891	51	833-896
884	92	793-891	52	833-896
885	93	793-891	53	833-896
886	94	793-891	54	833-896
887	95	793-891	55	833-896
888	96	793-891	56	833-896
889	97	793-891	57	833-896
890	98	793-891	58	833-896
891	99	793-891	59	833-896
892	1	892-990	60	833-896
893	2	892-990	61	833-896
894	3	892-990	62	833-896
895	4	892-990	63	833-896
896	5	892-990	NOT USED	833-896

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
897	6	892-990	1	897-960
898	7	892-990	2	897-960
899	8	892-990	3	897-960
900	9	892-990	4	897-960
901	10	892-990	5	897-960
902	11	892-990	6	897-960
903	12	892-990	7	897-960
904	13	892-990	8	897-960
905	14	892-990	9	897-960
906	15	892-990	10	897-960
907	16	892-990	11	897-960
908	17	892-990	12	897-960
909	18	892-990	13	897-960
910	19	892-990	14	897-960
911	20	892-990	15	897-960
912	21	892-990	16	897-960
913	22	892-990	17	897-960
914	23	892-990	18	897-960
915	24	892-990	19	897-960
916	25	892-990	20	897-960
917	26	892-990	21	897-960
918	27	892-990	22	897-960
919	28	892-990	23	897-960
920	29	892-990	24	897-960
921	30	892-990	25	897-960
922	31	892-990	26	897-960
923	32	892-990	27	897-960
924	33	892-990	28	897-960
925	34	892-990	29	897-960
926	35	892-990	30	897-960
927	36	892-990	31	897-960
928	37	892-990	32	897-960
929	38	892-990	33	897-960
930	39	892-990	34	897-960
931	40	892-990	35	897-960
932	41	892-990	36	897-960
933	42	892-990	37	897-960
934	43	892-990	38	897-960
935	44	892-990	39	897-960
936	45	892-990	40	897-960
937	46	892-990	41	897-960
938	47	892-990	42	897-960
939	48	892-990	43	897-960
940	49	892-990	44	897-960
941	50	892-990	45	897-960
942	51	892-990	46	897-960
943	52	892-990	47	897-960
944	53	892-990	48	897-960
945	54	892-990	49	897-960
946	55	892-990	50	897-960
947	56	892-990	51	897-960
948	57	892-990	52	897-960
949	58	892-990	53	897-960
950	59	892-990	54	897-960
951	60	892-990	55	897-960
952	61	892-990	56	897-960
953	62	892-990	57	897-960
954	63	892-990	58	897-960
955	NOT USED	892-990	59	897-960
956	65	892-990	60	897-960
957	66	892-990	61	897-960
958	67	892-990	62	897-960
959	68	892-990	63	897-960
960	69	892-990	NOT USED	897-960

Video Input/ Camera Numbers	Dome Address	AD 2083/02 Group	Dome Address	AD 2091 Group
961	70	892-990	1	961-1024
962	71	892-990	2	961-1024
963	72	892-990	3	961-1024
964	73	892-990	4	961-1024
965	74	892-990	5	961-1024
966	75	892-990	6	961-1024
967	76	892-990	7	961-1024
968	77	892-990	8	961-1024
969	78	892-990	9	961-1024
970	79	892-990	10	961-1024
971	80	892-990	11	961-1024
972	81	892-990	12	961-1024
973	82	892-990	13	961-1024
974	83	892-990	14	961-1024
975	84	892-990	15	961-1024
976	85	892-990	16	961-1024
977	86	892-990	17	961-1024
978	87	892-990	18	961-1024
979	88	892-990	19	961-1024
980	89	892-990	20	961-1024
981	90	892-990	21	961-1024
982	91	892-990	22	961-1024
983	92	892-990	23	961-1024
984	93	892-990	24	961-1024
985	94	892-990	25	961-1024
986	95	892-990	26	961-1024
987	96	892-990	27	961-1024
988	97	892-990	28	961-1024
989	98	892-990	29	961-1024
990	99	892-990	30	961-1024
991	1	991-1024	31	961-1024
992	2	991-1024	32	961-1024
993	3	991-1024	33	961-1024
994	4	991-1024	34	961-1024
995	5	991-1024	35	961-1024
996	6	991-1024	36	961-1024
997	7	991-1024	37	961-1024
998	8	991-1024	38	961-1024
999	9	991-1024	39	961-1024
1000	10	991-1024	40	961-1024
1001	11	991-1024	41	961-1024
1002	12	991-1024	42	961-1024
1003	13	991-1024	43	961-1024
1004	14	991-1024	44	961-1024
1005	15	991-1024	45	961-1024
1006	16	991-1024	46	961-1024
1007	17	991-1024	47	961-1024
1008	18	991-1024	48	961-1024
1009	19	991-1024	49	961-1024
1010	20	991-1024	50	961-1024
1011	21	991-1024	51	961-1024
1012	22	991-1024	52	961-1024
1013	23	991-1024	53	961-1024
1014	24	991-1024	54	961-1024
1015	25	991-1024	55	961-1024
1016	26	991-1024	56	961-1024
1017	27	991-1024	57	961-1024
1018	28	991-1024	58	961-1024
1019	29	991-1024	59	961-1024
1020	30	991-1024	60	961-1024
1021	31	991-1024	61	961-1024
1022	32	991-1024	62	961-1024
1023	33	991-1024	63	961-1024
1024	34	991-1024	NOT USED	961-1024

Camera/J-Box/Switch Interconnection Drawing


J1 through J10 (RS422 outputs) are interchangeable
RJ860 J-Box Motherboard (0301-0109-01)
Male Cinch Jones Plug
1 orange Data out HI
2 green Data out LO
3 black ac
4 red Ground
5 white ac
6 drain n.c.
7 brown Data in LO
8 yellow Data in HI
12-pin press-release Connector on J-Box Motherboard
12 green Data out HI (T+)
11 white Data out LO (T–)
10 Aux out 1 HI
9 Aux out 1 LO
8 Aux out 2 HI
7 Aux out 2 LO
6 red Data in HI (R+)
5 black Data in LO (R–)
4 1 Aux data in HI
3 1 Aux data in LO
2 2 Aux data in HI
1 2 Aux data in LO
Shield
Shield
Male Cinch-Jones Plug at end of Composite Cable
Composite Cable
12-pin Connector to AD 2083-02
7-pin Connector to SpeedDome Controller Bd.
GROUP
DATA LINE
IN
OUT
COM
AD 2083-02 [X] Code Translator
S1
SpeedDome 7-pin Connector RS422/AC Power
1 brown Data out LO (T–)
2 yellow Data out HI (T+)
3 black ac
4 red Ground
5 white ac
6 green Data in LO (R–)
7 orange Data in HI (R+)
SpeedDome UniCard Controller Board

Appendix B: SensorNet and UniCard

In this section:

- SensorNet Network Guide B-3
- SensorNet 6-Position J-Box B-5
- SensorNet 1-Position J-Box B-8
- Indoor SpeedDome B-11
- Outdoor SpeedDome B-13

SensorNet Network Design Guidelines

Understanding the SensorNet network is very important for a successful installation. This understanding will help you plan an efficient, reliable, and flexible network that can meet the facility's long-term needs. This guide provides basic guidelines for selecting a suitable topology and installing the network devices.

Distances and device counts contained in this guide assume **AWG 22 un-shielded twisted-pair cable**. Shielding adds capacitance, causing the SensorNet signal level to decline more rapidly as devices are attached or cable length increases. When pre-existing wire makes it necessary to use shielded twisted pair cable, the maximum distance will be reduced. For example, Belden 8760 cable will typically support complete network links (including backbone and branches) of approximately 750m (2500').

The receivers on SensorNet devices will operate satisfactorily at signal levels between 5v and 0.3v (differential peak-to-peak, measured with a scope). For installation planning purposes, an operating range of 5v to 1v is recommended. A SensorNet J-Box can be attached as the signal reaches 1-2v, to amplify the signal back to 5v. This will extend the network's distance and allow additional devices to be attached.

Network Design Considerations

A SensorNet network consists of one or more **network "links"**. Each link includes a twisted-pair **cable**, a SensorNet **host** and 1-32 SensorNet **devices**. A SensorNet link's maximum cable length is 1km (3300'). Devices can attach anywhere along the cable.

For proper operation, both ends of each SensorNet link must be terminated. This prevents signals reaching the end of the line from being reflected back along the line. All SensorNet devices and hosts have a termination switch or jumper for this purpose. When in the "terminate" position, a resistor is placed across the SensorNet cable connections to suppress reflected signals.

Think of each SensorNet link as a single twisted-pair cable with a terminating resistor at each end. A host and up to 32 devices are then placed along the cable. If the host is placed at one end of the cable, it must be terminated, and can only support one cable branch.

If the host is placed in any other position, it is not terminated and can support 2-4 cable branches. In this configuration, the last device attached to each cable branch must be terminated.

A J-Box can serve as a host repeater, to add a SensorNet link and up to 32 more devices, or to allow SensorNet cable runs beyond 1km (3300'). For maximum distance, attach the repeater J-Box at a point where the signal level has reached 1-2v (differential peak-to-peak, measured with a scope). This takes advantage of the prior host's driver capabilities while providing a strong signal for amplification. No more than 3 repeaters should be used in series between any two network devices, as this can create signal distortion, and cause operational errors.

SensorNet supports **three network link topologies**: daisy chain, backbone, and star. Each network link can be wired to apply the topology that best suits the link's unique requirements.

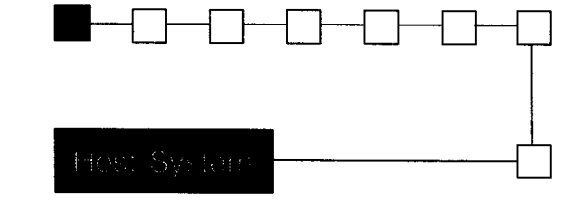
- A **daisy chain** topology originates at the host and sequentially connects multiple devices along a single path until the last device is attached. A separate twisted-pair cable connects each device to the next.
- A **backbone** topology uses a single continuous cable, with multiple devices attached directly or through short stup cables. The host can attach anywhere along the backbone.
- A **star** topology has up to four network branches that connect to a host which serves as the hub.

The distinction between daisy chain and backbone wiring is mostly physical. Daisy chains use separate cable segments to connect devices, while backbones connect all devices to one cable.

After the compression connectors are attached, the two topologies become electrically identical. However, backbone wiring may have a lower resistance because the cable is not cut.

Daisy Chain Link Guidelines

With a daisy chain network, a **separate cable connects each device to the next device** in the chain. This facilitates quick and easy installation. The daisy chain is a good solution for a temporary network or where the host has a few devices located in the same room or area. Consider using a backbone or star topology when installing large and permanent networks.



1. Terminate devices at both ends of the daisy chain. Leave all others unterminated.
2. Attach up to 32 devices on each link.
3. Limit combined cable length (from host to farthest device) to 1km (3300') or less.

SensorNet Network Design Guidelines, *continued*

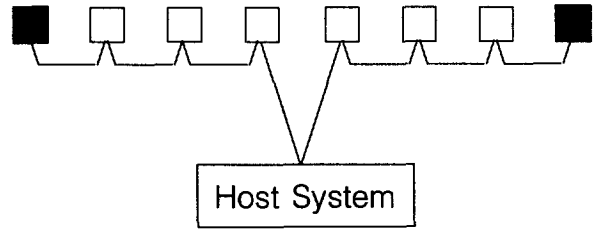
Daisy chain hosts are usually terminated and placed at one end; however, this location is not critical. If the host attaches elsewhere, the network becomes a 2-branch star. In this configuration, both end devices are terminated and the host is not terminated.

Backbone Link Guidelines

In a backbone network, a **single continuous cable connects all devices** served by the link. The unbroken cable allows you to install a permanent network that maintains a high level of reliability even when you must attach, disconnect, or move a device.

Use the backbone topology for large and permanent networks; it is also a good solution when conencting a few devices located in the same general area.

1. Locate the host anywhere along the backbone.
2. Terminate devices at both end s of each backbone link. Leave all others unterminated.
3. Attach up to 32 devices on each link.
4. Limit combined cable length (from host to farthest device) to 1km (3300') or less.
5. To attach unterminated devices, strip 1.2cm (.5") of insulation from each conductor at the connection point, fold in the middle of the stripped area, and secure in the device's compression connector.



☐ Unterminated SensorNet Device.*
■ Terminated SensorNet Device.*
— SensorNet Network Cable

* Devices: SpeedDome, EIM/Touch Tracker, J-Box.

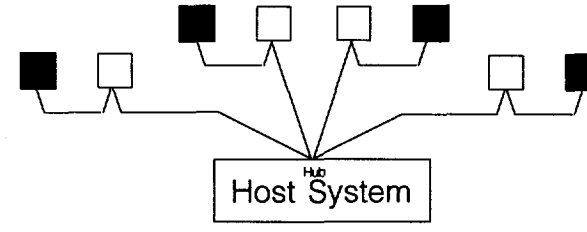
Star Link Guidelines

With a star network link, **up to four branches connect to a central "hub" location**. Devices can attach with a single continuous cable (backbone style) or separate cables (daisy chain style).

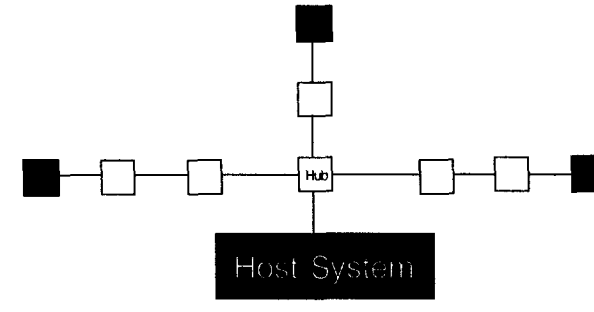
A star topology is a good solution when using existing cable. it also allows easy reconfiguration as devices are added or relocated.

1. Terminate devices at the end of each branch (4 maximum). Leave all others unterminated.
2. Attach up to 32 devices on each link.
3. Limit combined cable length (from host to farthest device) to 1km (3300') or less.
4. Whenever possible, attach devices backbone style, following the instructions under Backbone Link Guidelines.

Backbone Style Star



Daisy Chain Style Star



☐ Unterminated SensorNet Device.*
■ Terminated SensorNet Device.*
— SensorNet Network Cable

* Devices: SpeedDome, EIM/Touch Tracker, J-Box.

SensorNet 6-Position J-Box

Installation Kit: 0351-0739-01

Description	Qty.	Part No.
Anchor, toggle and bolt, 1/4x4	4	2880-0040
Anchor, wedge, bolt, 1/4x4	4	2880-0052
Screw, #10x1-1/2	4	2812-7816
Flat washer, wide, type B, #10	4	2848-9306

Specifications:

Power Source (50–60Hz): 100–120/200–240Vac
Power Consumption: ..... 250W max.
Voltage Output: ..... 28Vac, 5A max.,
Fuses F1, F2: ..... 2A, 250V, Slow Blow
Fuses F3, F4: ..... 6.3A, 250V, Slow Blow
Dimensions:
Height: 32cm
Width: 21cm
Depth: 16cm
Weight: 8.5kg

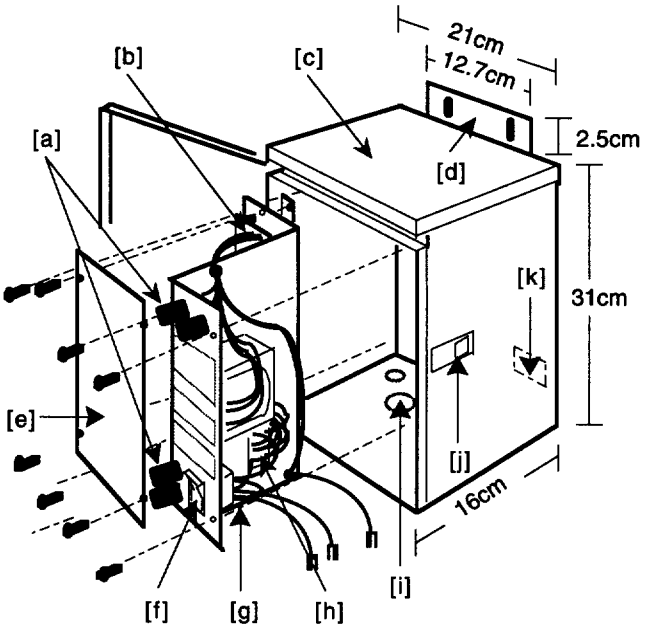
Regulatory Requirements:

- When the unit is hard wired, the disconnect device (circuit breaker) should be readily accessible.
- Use only polarized plug/cordsets; non-polarized plugs invalidate regulatory approvals. The cord must be type H05 VV-F or H05 VV H2-F, with a minimum conductor size of .75 mm and fitted with a 10A rated connector. The cord anchor will accept cords with an outer diameter in the range of 5–9mm.

Installation Guidelines:

- Review the **SensorNet Network Design Guidelines** on pages B-3 and B-4 to ensure proper network design.
- NEVER PIERCE the enclosure.
- Always mount the J-Box vertically and within 122m (400') of the indoor domes.
- Ensure that the power On/Off switch is accessible.
- Always use dedicated, unswitched 24 hour AC power, supplied in accordance with local codes.
- Ensure proper grounding.
- Always use the four mounting bolts for wall and pole mount installations.
- For banding a dome to a pole, use the clamp package provided.

J-Box Orientation



a. fuses
b. PC board
c. enclosure
d. mounting bracket
e. cover plate
f. On/Off switch
g. chassis
h. TB1
i. knockouts
j. latch
k. TB2

Mounting Procedure

1. Remove the four screws from the cover plate and remove the plate.
2. Remove the four screws securing the chassis to the enclosure.
3. Disconnect the wires from TB2 and remove the chassis from the enclosure.
4. For data and power cable access, remove the necessary knockouts from the bottom plate of the enclosure.
5. Using the enclosure mounting brackets as a template, mark the mounting hole locations on the designated area of the wall.
6. Drill four 1/4-inch holes at the marked areas.
7. Secure the enclosure in place using either the four hollow wall anchors for sheetrock, concrete anchors for blocks, or wood screws for plywood.
8. Pull the cables through the knockout holes in the bottom plate. Align any conduit with the holes.

Input Power to J-Box

Use the figure below to properly connect incoming AC wires to the TB2 connector for 115Vac or 230Vac operation.

IMPORTANT: 230Vac operation requires chassis jumper changes. Refer to the chassis panel for details.

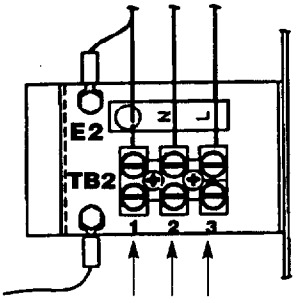
Chassis to TB2

COLOR	PIN	FXN
Green	1	GND
Black	2	Neutral
Black	3	Line

AC Line to TB2

COLOR	PIN	FXN
Green	1	GND
Blue	2	Neutral
Brown	3	Line

From Chassis

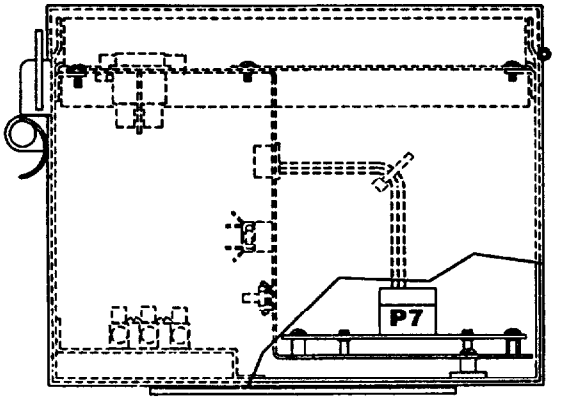


From AC Line

Power to PC Board

1. Ensure that the chassis is properly secured in the enclosure.
2. To connect AC power to the PCB, insert the polarized connector coming from the chassis to P7 on the PCB. Refer to the figure below.

Top View



P7 Connector

COLOR	PIN	FXN
Black	4	28Vac
Green	5	GND
Black	6	28Vac

Data Line Connections and Terminations

1. Wire the data and power cables coming from the domes to the 5-position compression fittings.
2. Connect the compression fittings to dome ports P1–P6 [a,b] on the PCB.
3. Wire the data cable coming from the host device and cables going to an auxiliary device to a 4-position compression fitting.
4. Connect the compression fitting to the host/auxilliary connector P8 [c] on the PCB.
5. Set jumpers JW1, JW2, JW3, and JW4 [d,e,f,g] to the correct position. Shorting pins 1–2 terminates the device. Refer to the *SensorNet Network Guide* to determine the necessary terminations for the chosen network topology.

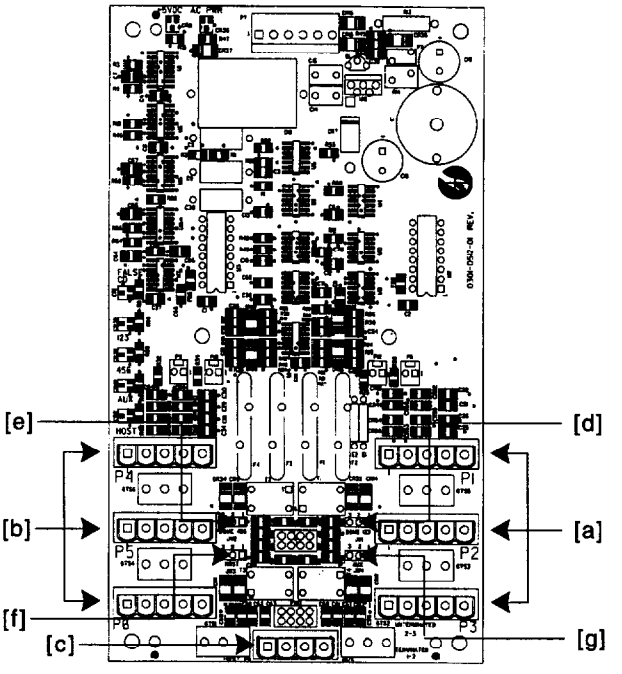
P1–P6 Connectors

COLOR	PIN	FXN
Orange	1	SensorNet +
White	2	28Vac
Red	3	GND
Black	4	28Vac
Yellow	5	SensorNet -

P8 Connector

COLOR	PIN	FXN
Orange	1	Host +
Yellow	2	Host -
Orange	3	Auxiliary +
Yellow	4	Auxiliary -

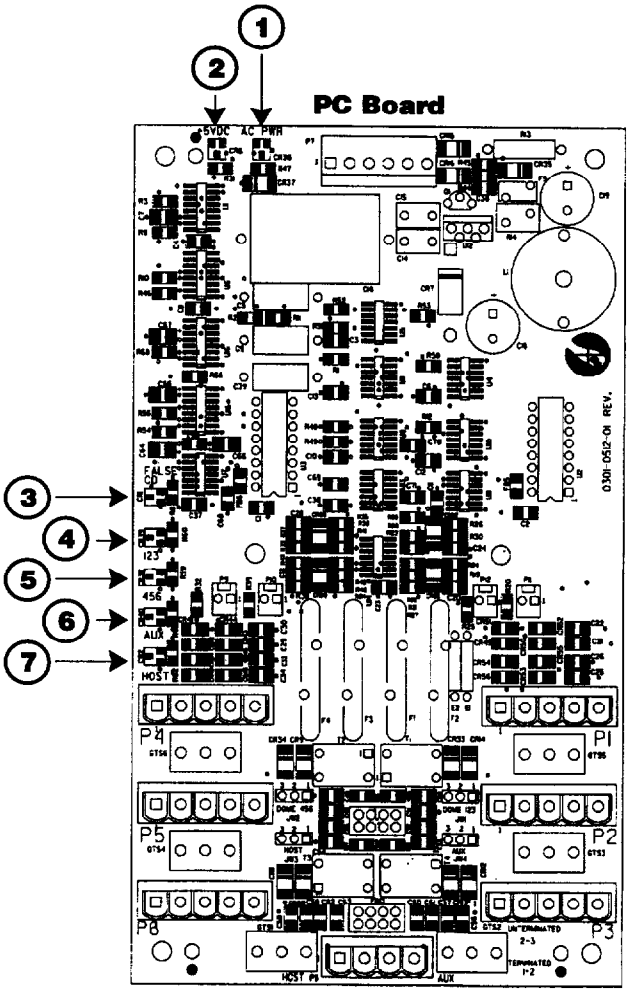
PC Board



SensorNet 6-Position J-Box, continued

Data and Power LED Indicators

The LED indicators allow visual verification of SensorNet signals and power to the dome ports and host/auxiliary ports. Use the status information listed below to determine proper operation of the devices.



1. **AC PWR** is yellow when 24Vac from the transformer to the PCB is present.
2. **+5VDC** is green when DC power from the on-board regulator is present.
3. **FALSE CD** is red for .5sec if the device receives a false pulse.
4. **123** is yellow for 30ms to indicate communications activity from dome ports 1, 2, or 3.
5. **456** is yellow for 30ms to indicate communications activity from dome ports 4, 5, or 6.
6. **AUX** is yellow for 30ms to indicate communications activity from the auxiliary port.
7. **HOST** is yellow for 30ms to indicate communications activity from the host port.

SensorNet 1-Position J-Box

Installation Kit: 0351-0739-02

Description	Qty.	Part No.
Anchor, toggle and bolt, 1/4x4	4	2880-0040
Anchor, wedge, bolt, 1/4x4	4	2880-0052
Screw, #10x1-1/2	4	2812-7816
Flat washer, wide, type B, #10	4	2848-9306

Specifications:

Power Source (50–60Hz): 100–120/200–240Vac
Power Consumption: ..... 250W max.
Voltage Output: ..... 28Vac, 5A max.,
Fuses F1, F2: ..... 2A, 250V, Slow Blow
Fuses F3, F4: ..... 6.3A, 250V, Slow Blow
Dimensions:
Height: 32cm
Width: 21cm
Depth: 16cm
Weight: 8.5kg

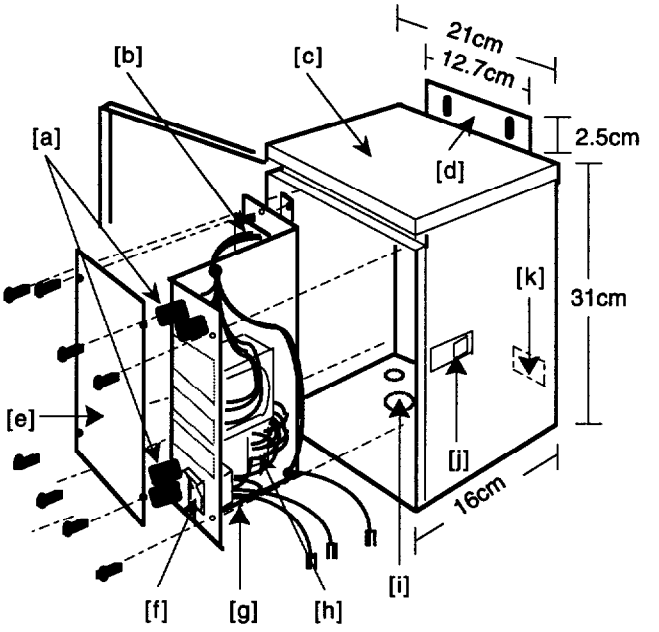
Regulatory Requirements:

- When the unit is hard wired, the disconnect device (circuit breaker) should be readily accessible.
- Use only polarized plug/cordsets; non-polarized plugs invalidate regulatory approvals. The cord must be type H05 VV-F or H05 VV H2-F, with a minimum conductor size of .75 mm and fitted with a 10A rated connector. The cord anchor will accept cords with an outer diameter in the range of 5–9mm.

Installation Guidelines:

- Review the **SensorNet Network Design Guidelines** on pages B-3 and B-4 to ensure proper network design.
- NEVER PIERCE the enclosure.
- Always mount the J-Box vertically and within 7.6m (25') of the outdoor domes.
- Ensure that the power On/Off switch is accessible.
- Always use dedicated, unswitched 24 hour AC power, supplied in accordance with local codes.
- Ensure proper grounding.
- Always use the four mounting bolts for wall and pole mount installations.
- For banding a dome to a pole, use the clamp package provided.
- Minimize exposure to environmental extremes and mount in a sheltered area whenever possible.

J-Box Orientation



a. fuses
b. PC board
c. enclosure
d. mounting bracket
e. cover plate
f. On/Off switch
g. chassis
h. TB1
i. knockouts
j. latch
k. TB2

Mounting Procedure

1. Remove the four screws from the cover plate and remove the plate.
2. Remove the four screws securing the chassis to the enclosure.
3. Disconnect the wires from TB2 and remove the chassis from the enclosure.
4. For data and power cable access, remove the necessary knockouts from the bottom plate of the enclosure.
5. Using the enclosure mounting brackets as a template, mark the mounting hole locations on the designated area of the wall.
6. Drill four 1/4-inch holes at the marked areas.
7. Secure the enclosure in place using either the four hollow wall anchors for sheetrock, concrete anchors for blocks, or wood screws for plywood.
8. Pull the cables through the knockout holes in the bottom plate and align the conduit with the holes.

SensorNet 1-Position J-Box, *continued*

Input Power to J-Box

Use the figure below to properly connect incoming AC wires to the TB2 connector for 115Vac or 230Vac operation.

IMPORTANT: 230Vac operation requires chassis jumper changes. Refer to the chassis panel for details.

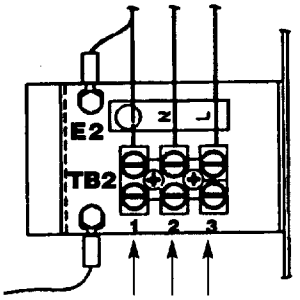
Chassis to TB2

COLOR	PIN	FXN
Green	1	GND
Black	2	Neutral
Black	3	Line

AC Line to TB2

COLOR	PIN	FXN
Green	1	GND
Blue	2	Neutral
Brown	3	Line

From Chassis

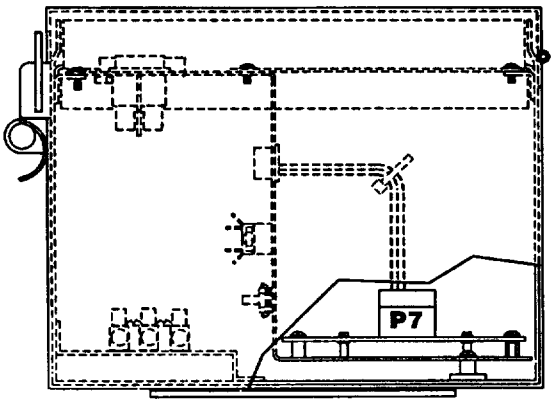


From AC Line

Power to PC Board

1. Ensure that the chassis is properly secured in the enclosure.
2. To connect AC power to the PCB, insert the polarized connector coming from the chassis to P7 on the PCB. Refer to the figure below.

Top View



P7 Connector

COLOR	PIN	FXN
Black	4	28Vac
Green	5	GND
Black	6	28Vac

Data Line Connections and Terminations

1. Wire the data and power cable coming from the dome to a 5-position compression fitting.
2. Connect the compression fitting to dome port P1 [a] on the PCB.
3. Wire the data cable coming from the host device and cables going to an auxiliary device to a 4-position compression fitting.
4. Connect the compression fitting to the host/auxilliary connector P8 [b] on the PCB.

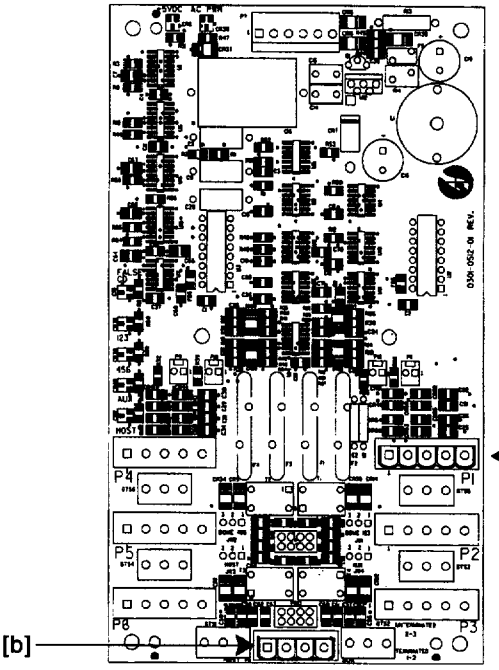
P1 Connector

COLOR	PIN	FXN
Orange	1	SensorNet +
White	2	28Vac
Red	3	GND
Black	4	28Vac
Yellow	5	SensorNet -

P8 Connector

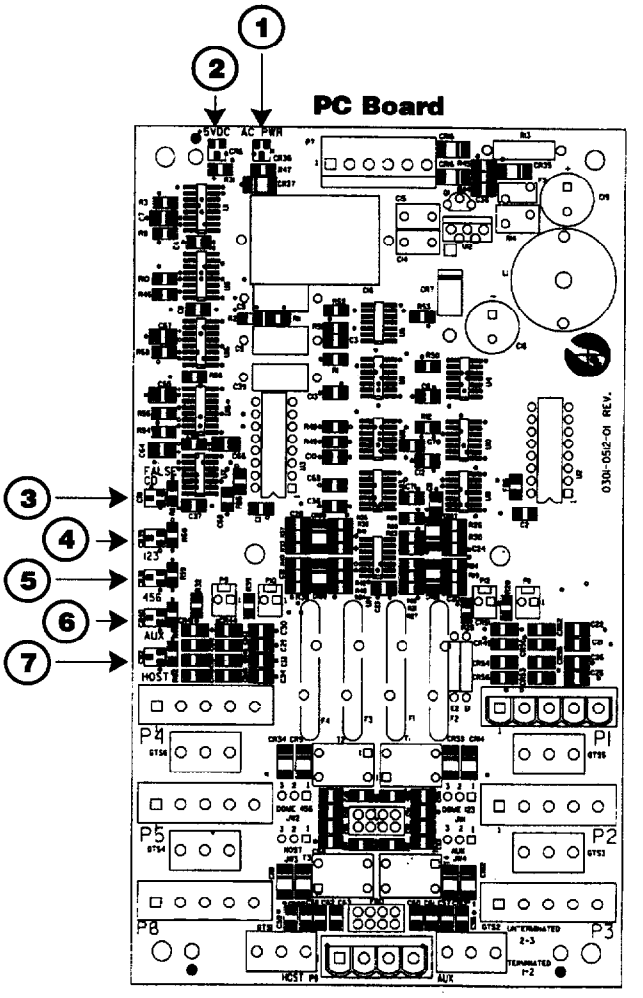
COLOR	PIN	FXN
Orange	1	Host +
Yellow	2	Host -
Orange	3	Auxiliary +
Yellow	4	Auxiliary -

PC Board



Data and Power LED Indicators

The LED indicators allow visual verification of SensorNet signals and power to the dome port and host/auxiliary ports. Use the status information listed below to determine proper operation of the devices.



1. **AC PWR** is yellow when 24Vac from the transformer to the PCB is present.
2. **+5VDC** is green when DC power from the on-board regulator is present.
3. **FALSE CD** is red for .5sec if the device receives a false pulse.
4. **123** is yellow for 30ms to indicate communications activity from dome port 1.
5. **456** is not utilized on the SensorNet 1-Position J-Box.
6. **AUX** is yellow for 30ms to indicate communications activity from the auxiliary port.
7. **HOST** is yellow for 30ms to indicate communications activity from the host port.

Indoor SpeedDome & SpeedDome NP

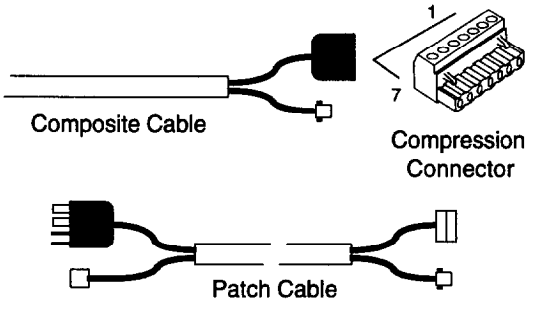
Parts Required:

Description	Qty.	Part No.
BNC connector	1	2111-0035-01
BNC jack	1	2111-0034-01
Nyon cable tie	1	6009-006

SpeedDomes support either RS422 or SensorNet data interfaces. By setting jumper pins on the dome UniCards, you will be able to easily set the type of data interface required for wiring and cabling. Follow the steps below for properly installing an indoor SpeedDome or SpeedDome NP:

NOTE: For additional information on dome installation and service, refer to the appropriate section in this manual.

1. **RS422 Cable Wiring.** Replace the Cinch-Jones connector on the composite cable with a female compression-type connector (PN 2109-0254-06) or use a patch cable (PN 0650-0657-01). Refer to **Table 1**.



SensorNet Cable Wiring. Wire a female compression-type connector (PN 2109-0254-06) to the SensorNet data cable using **Table 2**.

Table 1. RS422

PIN	COL	FXN
1	Brn	Data Out -
2	Ylw	Data Out +
3	Blk	AC In
4	Red	Gnd
5	Wht	AC In
6	Grn	Data In -
7	Org	Data In +

Table 2. SensorNet

PIN	COL	FXN
1	Org	Data -
2	Ylw	Data +
3	Blk	AC In
4	Red	Gnd
5	Wht	AC In
6		Not Used
7		Not Used

2. Set jumpers **E2** and **E3** on the UniCard interface board [a] for RS422 or SensorNet cabling using **Table 3**. To locate the jumpers, see the figure on page D-12.

   The SensorNet interface requires a data line termination at **E1** on the UniCard, depending on the dome positions along the cable. See **Table 4**.

Table 3

CABLE TYPE	E2	E3
RS422	2-3	2-3
SensorNet *	1-2	1-2

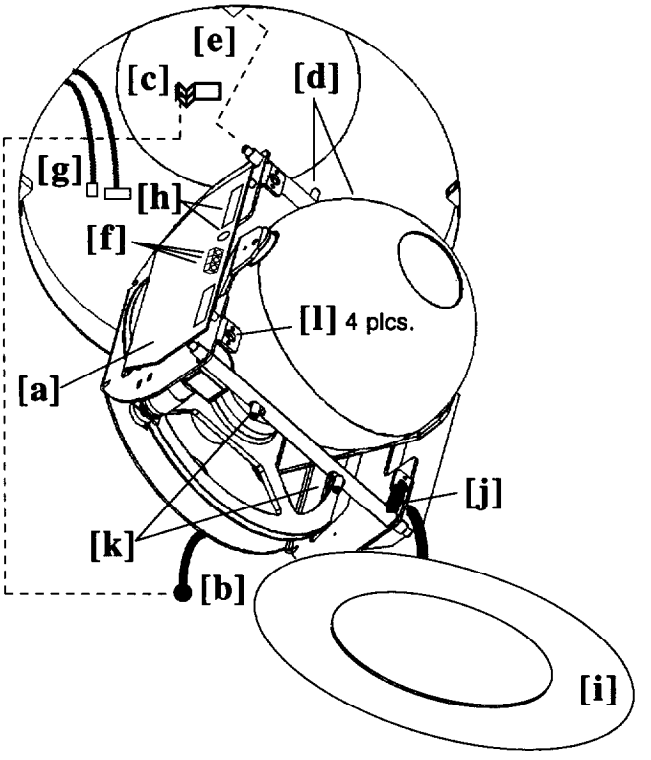
Table 4

DOME POSITION	E1
Last (Termination)	2-3
All Others *	1-2

* Factory default setting.

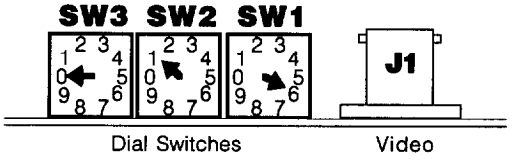
3. Snap the ball [b] of the lanyard hanging from the chassis into the bracket [c] at the top of the housing.

4. Squeeze the spring-loaded ejector pins [d] together to seat the chassis in the corner receptacles [e]. The PC board must face the cables exiting the access holes in the housing.



Indoor SpeedDome *continued*

5. Set the dial switches [f] on the UniCard to the appropriate dome address. The example below uses address 16.



6. With the dome chassis hanging down, connect the data and video cables [g] to **P3** and **J1** [h] on the UniCard.

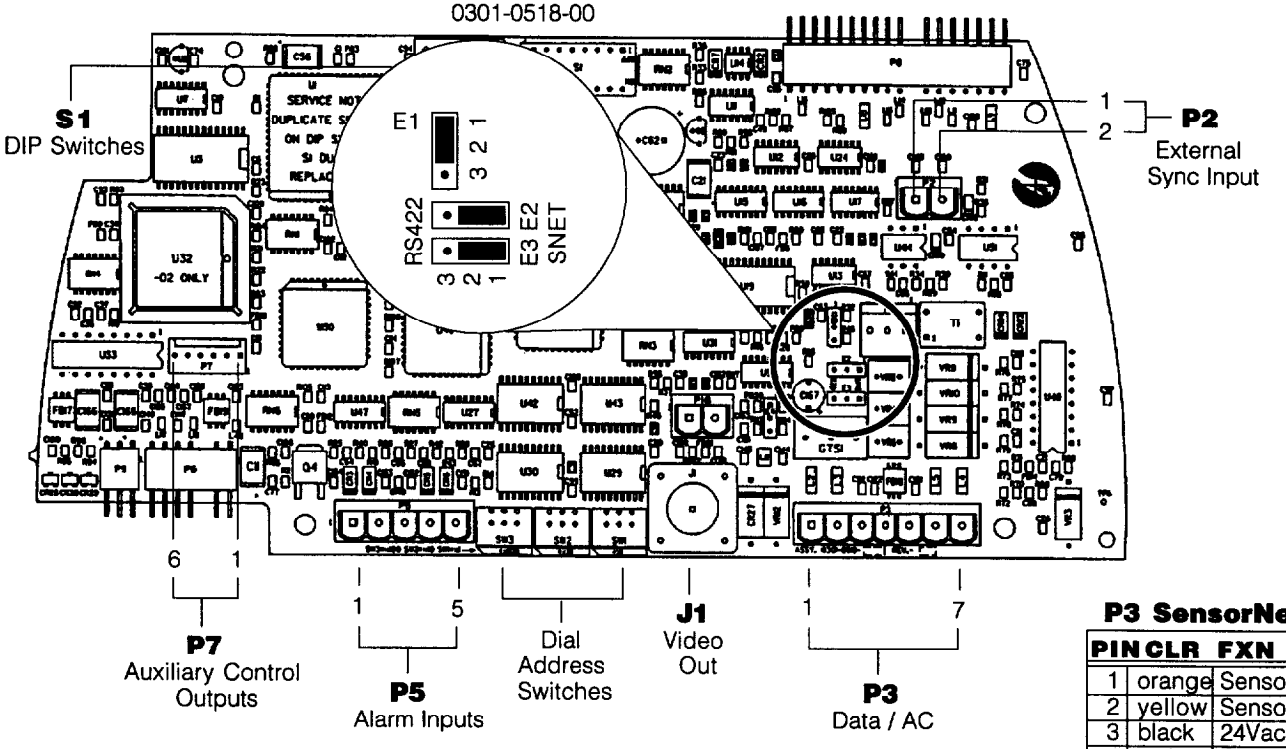
7. Attach the skirt assembly [i] or optional bubble assembly to the chassis by inserting its T-lanyard into a slot [j] on the chassis until both ends catch securely.

8. To lock the chassis in the housing, squeeze the spring-loaded ejector pins [k] and swing the chassis all the way up while easing the cables through the access holes. Release these pins into the remaining corner receptacles.

9. Snap the four pins or the skirt (or bubble) assembly into the 4 chassis receptacles [l].

UniCard Interface Board

0301-0518-00



The UniCard provides an External Video Sync Input (P2, mate connector PN 2109-0254-01) to sync the monitors to an external sync generator source.

The UniCard also provides 4 TTL Level Alarm Inputs (P5, mate connector PN 2109-0254-04) and 4 open-collector Auxiliary Control Outputs (P7, mate connector PN 2109-0101-05).

P2 External Sync Input

PIN	FXN
1	External Sync Low Input
2	External Sync High Input

P7 Auxiliary Control Outputs

PIN	FXN
1	Digital Ground
2	Auxiliary Control Output P0
3	Auxiliary Control Output P1
4	Auxiliary Control Output P2
5	Auxiliary Control Output P3
6	+12 Vdc

P5 External Alarm Inputs

PIN	FXN
1	Alarm 0 Input
2	Alarm 1 Input
3	Alarm 2 Input
4	Alarm 3 Input
5	Digital Ground

P3 SensorNet/AC

PIN	CLR	FXN
1	orange	SensorNet A
2	yellow	SensorNet B
3	black	24Vac A
4	red	Ground
5	white	24Vac B

P3 RS422/AC

PIN	CLR	RS422 FXN
1	brown	Data out LO (T–)
2	yellow	Data out HI (T+)
3	black	24Vac A
4	red	Ground
5	white	24Vac B
6	green	Data in LO (R–)
7	orange	Data in HI (R+)

Outdoor SpeedDome

Parts Required:

Description	Qty.	Part No.
Environmental assy.	1	0300-0901-01
Bubble assy, outdoor	1	0400-0519-01
Cap Outdoor	1	0500-4132-01
Nut hex 1.5 pipe w/ seal	1	1417-0042-01
RTV compound	1	1600-0001
Pipe sealant	1	1600-0095-01
BNC connector	1	2111-0035-01
BNC jack	1	2111-0034-01
Nyon cable tie	1	6009-006

SpeedDomes support either RS422 or SensorNet data interfaces. By setting jumper pins on the dome UniCards, you will be able to easily set the type of data interface required for wiring and cabling. Follow the steps below for properly installing an outdoor SpeedDome:

NOTE: For additional information on dome installation and service, refer to the appropriate section in this manual.

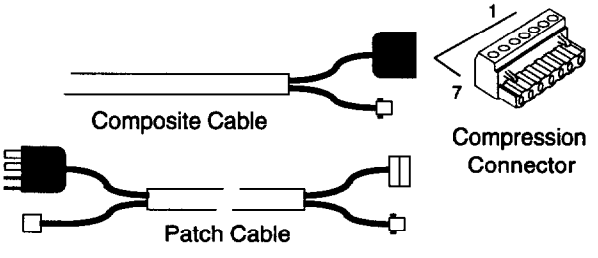
1. Using the tamper-proof tool (T-20), remove the captive bubble attachment screws [a] from the housing then remove the bubble [b].

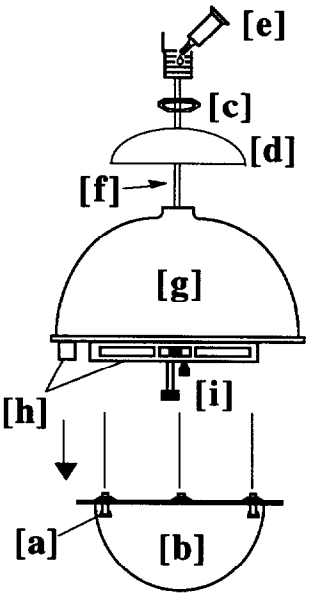
2. Screw the 1.5" hex nut [c], with its white (or yellow) seal facing the cap [d] onto the pipe.

3. Apply the pipe sealant [e] to the threads of the elbow (or nipple, if this is a ceiling mount). Then feed the composite cable [f] through the housing [g].

4. Thread the dome housing onto the elbow (or nipple), compressing the cap against the housing until tight. Level as shown [h]. Apply RTV around the hex nut.

5. **RS422 Cable Wiring.** Replace the Cinch-Jones connector on the composite cable with a female compression-type connector (PN 2109-0254-06) or use a patch cable (PN 0650-0657-01). Refer to **Table 1**.





SensorNet Cable Wiring. Wire a female compression connector (PN 2109-0254-06) to the SensorNet data cable, using **Table 2**.

Table 1. RS422

PIN	COL	FXN
1	Brn	Data Out -
2	Ylw	Data Out +
3	Blk	AC In
4	Red	Gnd
5	Wht	AC In
6	Grn	Data In -
7	Org	Data In +

Table 2. SensorNet

PIN	COL	FXN
1	Org	Data -
2	Ylw	Data +
3	Blk	AC In
4	Red	Gnd
5	Wht	AC In
6		Not Used
7		Not Used

6. Connect the cable compression connector to **J2** and the video connector to **J1** on the outdoor interface board [j], mounted on the outside of the bracket. See the figure on page D-14.

   Ensure when connecting to this board that the compression connector screws are turned toward the inner black assembly. Tie wrap the cable to the bracket assembly to make room for the chassis.

Outdoor SpeedDome, *continued*

7. Set jumpers **E2** and **E3** on the UniCard interface board [k] for RS422 or SensorNet cabling, using **Table 3**. To locate the jumpers, see the figure on page D-15.

The SensorNet interface requires a data line termination at **E1** on the UniCard, depending on the dome positions along the cable. See **Table 4**.

Table 3

CABLE TYPE	E2	E3
RS422	2-3	2-3
SensorNet *	1-2	1-2

Table 4

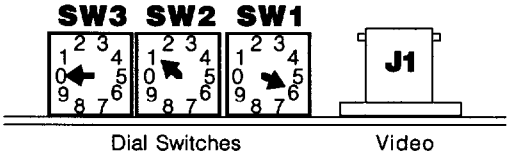
DOME POSITION	E1
Last (Termination)	2-3
All Others *	1-2

* Factory default setting.

8. Snap the ball [l] of the lanyard hanging from the chassis into the bracket [m] at the top of the housing.

9. Squeeze the spring-loaded ejector pins [n] together to seat the chassis in the corner receptacles [o]. The PC board must face the cables exiting the access holes in the housing.

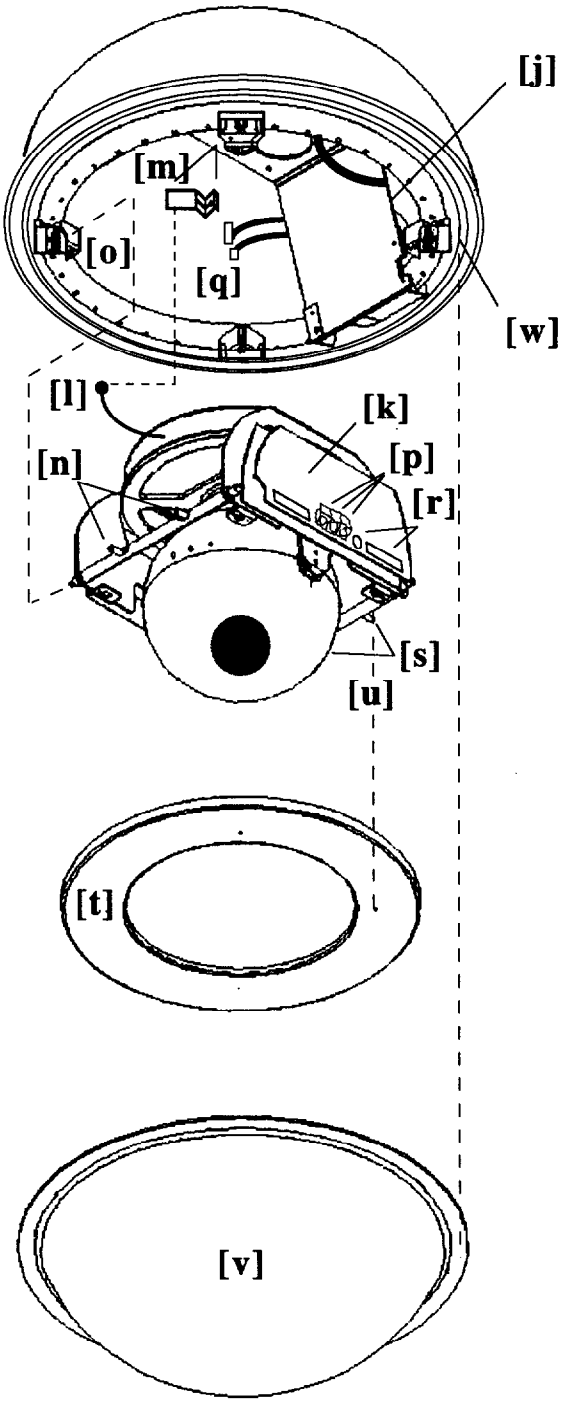
10. Set the dial switches [p] on the UniCard to the appropriate dome address. The example below uses address 16.



11. With the dome chassis hanging down, connect the data and video cables [q] from the outdoor interface board to **P3** and **J1** [r] on the UniCard.

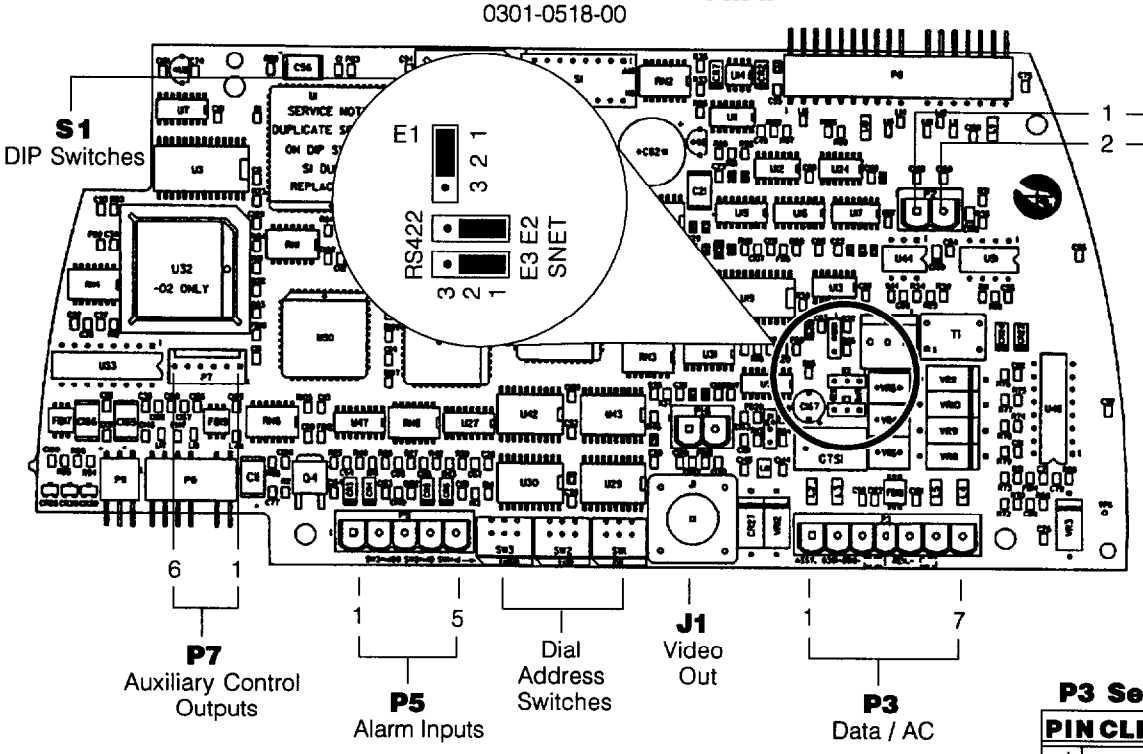
12. To lock the chassis in the housing, squeeze the spring-loaded ejector pins [s] and swing the chassis all the way up while easing the cables through the access holes. Release these pins into the remaining corner receptacles.

13. Snap the four pins of the skirt assembly [t] into the four chassis receptacles [u]. Then screw the attachment screws of the bubble [v] into the three housing receptacles [w].



Outdoor SpeedDome, *continued*

UniCard Interface Board
0301-0518-00



P3 SensorNet/AC

PIN	CLR	FXN
1	orange	SensorNet A
2	yellow	SensorNet B
3	black	24Vac A
4	red	Ground
5	white	24Vac B

The UniCard provides an External Video Sync Input (P2, mate connector PN 2109-0254-01) to sync the monitors to an external sync generator source.

P2 External Sync Input

PIN	FXN
1	External Sync Low Input
2	External Sync High Input

The UniCard also provides 4 TTL Level Alarm Inputs (P5, mate connector PN 2109-0254-04) and 4 open-collector Auxiliary Control Outputs (P7, mate connector PN 2109-0101-05).

P7 Auxiliary Control Outputs

PIN	FXN
1	Digital Ground
2	Auxiliary Control Output P0
3	Auxiliary Control Output P1
4	Auxiliary Control Output P2
5	Auxiliary Control Output P3
6	+12 Vdc

P5 External Alarm Inputs

PIN	FXN
1	Alarm 0 Input
2	Alarm 1 Input
3	Alarm 2 Input
4	Alarm 3 Input
5	Digital Ground

P3 RS422/AC

PIN	CLR	RS422 FXN
1	brown	Data out LO (T–)
2	yellow	Data out HI (T+)
3	black	24Vac A
4	red	Ground
5	white	24Vac B
6	green	Data in LO (R–)
7	orange	Data in HI (R+)

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